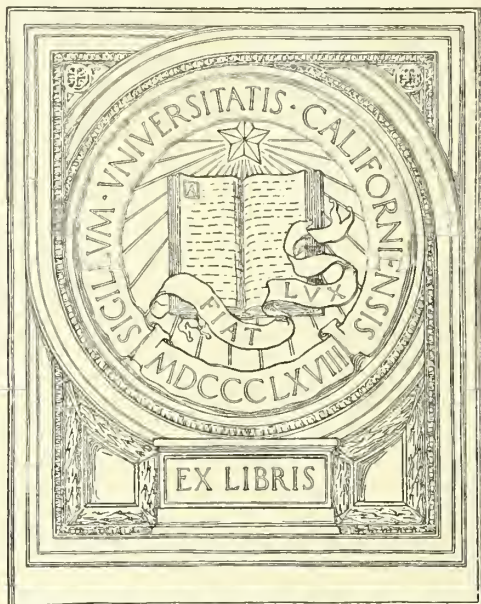



MEDICAL SCHOOL
LIBRARY





Digitized by the Internet Archive
in 2016

<https://archive.org/details/neworleansmedica96unse>

NEW ORLEANS
MEDICAL AND SURGICAL
JOURNAL



VOLUME NINETY-SIX



JULY, 1943

through

JUNE, 1944

NEW ORLEANS
Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society
under the jurisdiction of the following named
Journal Committee:

C. C. deGravelles, M. D., Ex officio
For one year: Lucien A. LeDoux, M. D., Chairman
H. W. Kostmayer, M. D., Secretary
For two years: James K. Howles, M. D.
For three years: G. C. Anderson, M. D.,
Vice-Chairman
Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D. *Editor-in-Chief*
Willard R. Wirth, M. D. *Editor*
Daniel J. Murphy, M. D. *Associate Editor*

COLLABORATORS—COUNCILORS

Edwin L. Zander, M. D.
J. T. O'Ferrall, M. D.
Guy R. Jones, M. D.
T. B. Tooke, Sr., M. D.
George Wright, M. D.
Rhett McMahon, M. D.
C. A. Martin, M. D.
W. F. Couvillion, M. D.
Paul T. Talbot, M. D. *General Manager*
1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

INDEX TO VOLUME NINETY-SIX

July, 1943—June, 1944

—A—

Adenomyoma of the gallbladder, by Gordon McHardy and Donovan Browne.....	567
Aldrich, C. Anderson—Ancient processes in a scientific age	2
Aleman, Ruth G.—Unusual infections in the newborn caused by <i>Staphylococcus aureus</i>	207
Allen, E. V.—Pneumonia in the army (Allen, Baird)	177
Allen, Robert Glenn—Warren Stone.....	213
Ancient processes in a scientific age, by C. Anderson Aldrich	2
Appendicitis, acute, and pelvic inflammatory disease, the diagnostic confusion between, by Frederick Fitzherbert Boyce	303
Arnell, Rupert E.—Maternal and child welfare in New Orleans (Arnell, Whitney).....	385
Arteriosclerosis, the pathology of, by George N. Irvine	262
Aviation medicine, history of, by Leonard K. Knapp	62

—B—

Bacon, John A.—Chaille oration.....	412
Bagassosis, by S. Chaille Jamison.....	291
Baird, Lester W.—(Joint author), see Allen, E. V.	177
Balkin, Gilbert—Leptospirosis.....	351
Bass, Elizabeth—Wars and women doctors.....	324
Bauer, Frank K.—The effect of repeated lumbar punctures on the spinal fluid in normal children	106
Bibliographic notes, the New Orleans Medical and Surgical Journal, by Mary Louise Marshall.....	523
Blood plasma, human, preparation and therapy, some practical aspects of, by J. W. Davenport, Jr.	97
Book reviews	38, 83, 126, 173, 235, 288, 337, 380, 430, 485, 546, 607
Boyce, Frederick Fitzherbert—The diagnostic confusion between acute appendicitis and pelvic inflammatory disease	303
Brown, Harry G.—(Joint author), see Kittredge, W. E.	562
Browne, Donovan—(Joint author), see McHardy, Gordon	567
Brucellosis, by Harry J. Schmidt.....	43

—C—

Carbol fuchsin stains for acid fast bacilli, a comparison of the Ziehl-Nielsen and the Moss cold, by David Kirsh and John R. Schenken.....	394
Carbon tetrachloride in medical therapy, new and important applications of, by Geo. F. Fasting	439
Carcinoma of the cervix at Charity Hospital, treatment of, by Manuel Garcia and Leon J. Menville	87
Caldwell, Guy—(Joint author), see Kepl, Maxwell	294
Carcinoma, gastric, end results in the surgical treatment of, by Harold H. Morris, Jr.....	254
Cervix, carcinoma, treatment of, at Charity Hospital, by Manuel Garcia and Leon J. Menville	87
Chaille oration, by John A. Bacon.....	412
Cirrhosis, portal, with reference to recent therapy, by Edwin E. Edwards.....	314
Clinico-pathologic conference, an interesting case, by W. H. Gillentine and Bjarne Pearson.....	275
Clinico-pathologic conference, by Howard T. Karsner and Louis Hamman	50
<i>Clostridium welchii</i> , urea peroxide, in vitro and in vivo, by Maxwell Kepl, Emil Hauser, Guy Caldwell and Alton Ochsner.....	294
Cohn, Isidore—Sulfonamides in surgery.....	461
Cole, Warren H.—Important considerations in the treatment of toxic goiter.....	247
Cortical extracts and desoxycorticosterone, the physiologic action of, by Charles M. Wilson.....	365
Craniocerebral trauma, by R. Glen Spurling.....	347
Crossen, Robert J.—Functional uterine bleeding.....	93

—D—

Davenport, J. W., Jr.—Some practical aspects of human blood plasma preparation and therapy	97
deGravelles, C. C.—The president's address.....	551
Digestive and tropical diseases, world wars and their bearing on medical practice, with special reference to, by George B. Eusterman.....	295
D'Ingianni, Vincente—Urticaria produced by poisonous caterpillars	356
Drake, Daniel, comments by, on medicine in New Orleans in 1844, by J. H. Musser.....	528
Dupuy, Homer—Normal variations of the T wave seen among soldiers.....	239
Dysmenorrhea, by B. Bernard Weinstein.....	396

—E—

Editorials	28, 72, 117, 159, 219, 278, 328, 370, 417, 472, 536, 592
Editors of the New Orleans Medical and Surgical Journal, biographic annotations to the pictorial gallery of the, by Rudolph Matas.....	519
Editors, portrait gallery of, New Orleans Medical and Surgical Journal	514
Edwards, Edwin W.—Portal cirrhosis with reference to recent therapy.....	314
Enuresis, nocturnal, ephedrine sulfate in the treatment of, by W. E. Kittredge and Harry G. Brown	562
Ephedrine sulfate in the treatment of nocturnal enuresis, by W. E. Kittredge and Harry G. Brown	562
Eusterman, George B.—World wars and their bearing on medical practice, with special reference to digestive and tropical diseases.....	295
Eye, common diseases and injuries of the, by George M. Haik	13

—F—

Faget, G. H.—The chronicity of leprosy.....	138
Fasting, Geo. F.—New and important applications of carbon tetrachloride in medical therapy..	439
Fitz, Reginald—Peace and health.....	557
Fossier, A. E.—The early history of the New Orleans Medical and Surgical Journal.....	496
Futch, W. D.—Albrecht von Haller.....	107

—G—

Gallbladder, adenomyoma of the, by Gordon McHardy and Donovan Browne.....	567
Garcia, Manuel—Treatment of carcinoma of the cervix at Charity Hospital (Garcia, Menville)...	87
Gillentine, W. H.—Clinico-pathologic conference, an interesting case (Gillentine, Pearson).....	275
Glaucoma and the general practitioner, by Ralph I. Lloyd	67
Glomerulonephritis, by Edgar Hull.....	16
Glycosuria, nonpancreatic, by Jerry B. Gwin.....	19
Goiter, toxic, important considerations in the treatment of, by Warren H. Cole.....	247
Goldsmith, Grace A.—Indications for vitamin therapy	199
Gynecology and obstetrics, sulfonamides in, by Curtis H. Tyrone	466

—H—

Haik, George M.—Common diseases and injuries of the eye	13
Hamman, Louis—(Joint author), see Karsner, Howard T.	50
Hargrove, M. D.—Acute pericarditis due to Streptococcus viridans	435
Hauser, Emil—(Joint author), see Kepl, Maxwell.....	294
Hernia, lumbar, by Robert Kapsinow.....	104
History, early, of the New Orleans Medical and Surgical Journal, by A. E. Fossier.....	496
Hodges, Fred Jenner—Lesions of the stomach.....	129
Hodges, Fred Jenner—"Near misses" in x-ray diagnosis	341
Hormone, the male sex, by Leonard B. Shipner.....	399
Hospital staff transactions and clinical meetings.....	122, 223
Hull, Edgar—Glomerulonephritis	16
Hull, Edgar—Tuberculosis and pregnancy.....	321
Hypertension, the role of renin and angiotonin in maintaining blood pressure, by Don C. Musser	308

—I—

Industrial hygiene program today, by J. G. Townsend	338
Industrial medicine, the physicians' role in, by J. G. Townsend	360
Infantile paralysis, its description and treatment, by Sister Elizabeth Kenny.....	134
Internal medicine, the sulfonamides in, by C. J. Tripoli	455
Irvine, George N.—The pathology of arteriosclerosis	262

—J—

Jamison, S. Chaille—Bagassosis	291
--------------------------------------	-----

—K—

Karsner, Howard T.—Clinico-pathologic conference (Karsner, Hamman).....	50
Kapsinow, Robert—Lumbar hernia.....	104
Kenny, Sister Elizabeth—Infantile paralysis, its description and treatment.....	134
Kepl, Maxwell—Experimental studies on urea peroxide with <i>Clostridium welchii</i> in vitro and in vivo (Kepl, Hauser, Caldwell, Ochsner)	294
Kirsh, David—A comparison of the Ziehl-Nielsen and the Moss cold carbol fuchsin stains for acid fast bacilli (Kirsh, Schenken).....	394
Kittredge, W. E.—Ephedrine sulfate in the treatment of nocturnal enuresis (Kittredge, Brown)	562
Knapp, Leonard K.—History of aviation medicine	62

—L—

Landry, Rudolph M.—History of yellow fever in New Orleans	6
Leprosy, the chronicity of, by G. H. Faget.....	138
Leptospirosis, by Gilbert Balkin.....	351
Lloyd, Ralph I.—Glaucoma and the general practitioner	67
Louisiana: Its record of medical progress 1718-1860, by William Dosite Postell.....	530
Louisiana State Board of Health, the functions and services of the.....	110
Louisiana State Medical Society News.....33, 76, 123, 167, 228, 283, 333, 376, 423, 478, 540, 600	
Lumbar punctures, effect of repeated, on the spinal fluid in normal children, by Franz K. Bauer	106

—M—

Marshall, Mary Louise—The New Orleans Medical and Surgical Journal, bibliographic notes...	523
Matas, Rudolph—Personal experiences and reflections on yellow fever.....	10
Matas, Rudolph—The New Orleans Medical and Surgical Journal, one hundred years of medical journalism in Louisiana, May, 1844—May, 1944	489
Maternal and child welfare in New Orleans, by Rupert E. Arnell and John M. Whitney.....	385
Medical education in war time, the limitations of, by J. H. Musser.....	414
Medical literature in Louisiana prior to the advent of the New Orleans Medical and Surgical Journal, by William Dosite Postell.....	508
Medical progress 1718-1860, Louisiana: Its record of, by William Dosite Postell.....	530
Medicine in New Orleans in 1844, comments by Daniel Drake on, by J. H. Musser.....	528
Memorial address, by James Q. Graves.....	556
Memoriam, in, by P. T. Talbot.....	1
Menville, Leon J.—(Joint author), see Garcia, Manuel	87

Morris, Jr., Harold H.—End results in the surgical treatment of gastric carcinoma.....	254
Musser, Don. C.—Hypertension, the role of renin and angiotonin in maintaining blood pressure	308
Musser, J. H.—Comments by Daniel Drake on medicine in New Orleans in 1844.....	528
Musser, J. H.—(Joint author), see Rausch, L. E.	271
Musser, J. H.—The limitations of medical education in war time.....	414
McHardy, Gordon—Adenomyoma of the gallbladder (McHardy, Browne)	567

—N—

Neurosurgery, American contributions to, by Charles Wilson	140
Newborn, unusual infections in the, caused by <i>Staphylococcus aureus</i> , by Ruth G. Aleman.....	207
New Orleans Medical and Surgical Journal, bibliographic notes, by Mary Louise Marshall.....	523
New Orleans Medical and Surgical Journal, biographic annotations to the pictorial gallery of the editors, by Rudolph Matas.....	519
New Orleans Medical and Surgical Journal, medical literature in Louisiana prior to the advent of the, by William Dosite Postell.....	508
New Orleans Medical and Surgical Journal, one hundred years of medical journalism in Louisiana, May, 1844—May, 1944, a message from Dr. Matas	489
New Orleans Medical and Surgical Journal 1844-1944, portrait gallery of the editors.....	514
New Orleans Medical and Surgical Journal, the early history of the, by A. E. Fossier.....	496
New Orleans, medicine 1844, comments by Drake, by J. H. Musser.....	528

—O—

Ochsner, Alton—(Joint author), see Kepl, Maxwell	294
Organization section	31, 74, 120, 162, 222, 280, 330, 372, 420, 474, 538, 595
Orleans Parish Medical Society transactions.....	32, 76, 164, 226, 281, 332, 375, 422, 477, 540, 598
Otolaryngology, sulfonamides in, by William A. Wagner	468

—P—

Patterson, Marcel—The incidence of peptic ulcer.....	570
Peace and health, by Reginald Fitz.....	557
Pearson, Bjarne—(Joint author), see Gillentine, W. H.	275
Pelvic inflammatory disease, the diagnostic confusion between acute appendicitis and, by Frederick Fitzherbert Boyce	303
Peptic ulcer, the incidence of, by Marcel Patterson	570
Pericarditis, acute, due to <i>streptococcus viridans</i> , by M. D. Hargrove.....	435
Plasma, human blood, preparation and therapy, some practical aspects of, by J. W. Davenport, Jr.	97
Pneumonia, atypical, complicating severe varicella in an adult, by L. E. Rausch, T. J. Grable, and J. H. Musser	271
Pneumonia in the army, by E. V. Allen and Lester W. Baird.....	177
Postell, William Dosite—Louisiana: Its record of medical progress 1718-1860	530
Postell, William Dosite—Medical literature in Louisiana prior to the advent of the New Orleans Medical and Surgical Journal.....	508
Pregnancy and tuberculosis, by Edgar Hull.....	321
President's address, by C. C. deGravelles.....	551

—R—

Rausch, L. E.—Atypical pneumonia complicating severe varicella in an adult (Rausch, Grable, Musser)	271
Reed, W. A.—Sulfonamides in urology.....	465

Rollings, Harry Evan—Acute ventricular failure.....	446
Ryerson, Edwin W.—The common diseases and injuries of the spine.....	195

—S—

Schamberg, Ira Leo—Louisiana statewide serologic evaluation survey, 1942-1943	406
Schenken, John R.—(Joint author), see Kirsh, David	394
Schmidt, Harry J.—Brucellosis	43
Scientific age, ancient processes, by C. Anderson Aldrich	2
Serologic evaluation survey, 1942-1943, Louisiana statewide, by Ira Leo Schamberg.....	406
Shpiner, Leonard B.—The male sex hormone.....	399
Spinal fluid, effect of repeated lumbar punctures on, by Frank K. Bauer.....	106
Spine, the common diseases and injuries of the, by Edwin W. Ryerson	195
Spurling, R. Glen—Craniocerebral trauma.....	347
Staphylococcus aureus, unusual infections in the newborn caused by, by Ruth G. Aleman.....	207
Stomach, lesions of the, by Fred Jenner Hodges.....	129
Stone, Warren, by Robert Glenn Allen.....	213
Sulfonamides, symposium on the uses of, see Tripoli, C. J.; Cohn, Isidore; Reed, W. A.; Tyrone, Curtis H.	455
Surgery, sulfonamides in, by Isidore Cohn.....	461
Sylvatic plague, by Sam A. Trufant, III.....	184
Symposium on the uses of sulfonamides, see Tripoli, C. J.; Cohn, Isidore; Reed, W. A.; Tyrone, Curtis H.	455

—T—

Talbot, P. T.—In memoriam	1
Thomas, P. K.—Undulant fever, its epidemiology and diagnosis	147
Townsend, J. G.—The industrial hygiene program today	388
Townsend, J. G.—The physicians' role in industrial medicine	360
Tripoli, C. J.—The sulfonamides in internal medicine	455
Tropical diseases, world wars and their bearing on medical practice, with special reference to digestive and, by George B. Eusterman.....	295
Trufant, Sam A. III—Sylvatic plague.....	184
Tuberculosis and pregnancy, by Edgar Hull.....	321
T wave seen among soldiers, normal variations of the, by Homer Dupuy.....	239
Tyrone, Curtis H.—Sulfonamides in gynecology and obstetrics	466

—U—

Ulcer, peptic, the incidence of, by Marcel Patterson	570
Undulant fever, its epidemiology and diagnosis, by P. K. Thomas.....	147
Urea peroxide with Clostridium welchii in vitro and in vivo, by Maxwell Kepl, Emil Hauser, Guy Caldwell and Alton Ochsner.....	294
Urology, sulfonamides in, by W. A. Reed.....	465
Urticaria produced by poisonous caterpillars, by Vincent D'Ingianni	356
Uterine bleeding, functional, by Robert J. Crossen	93

—V—

Varicella, severe, in an adult, atypical pneumonia complicating, by L. E. Rausch, T. J. Grable, and J. H. Musser	271
Ventricular failure, acute, by Harry Evan Rollings	446
Vitamin therapy, indications for, by Grace A. Goldsmith	199
Von Haller, Albrecht, by W. D. Futch.....	107

—W—

Wagner, William A.—Sulfonamides in otolaryngology	468
Wars and women doctors, by Elizabeth Bass.....	324
Weinstein, B. Bernard—Dysmenorrhea	396
Whitney, John M.—(Joint author), see Arnell, Rupert E.	385
Wilson, Charles—American contributions to neurosurgery	140
Wilson, Charles M.—The physiologic action of cortical extracts and desoxycorticosterone.....	365
Women doctors and wars, by Elizabeth Bass.....	324
X-ray diagnosis, "near misses in, by Fred Jenner Hodges	341
Yellow fever in New Orleans, history of, by Rudolph M. Landry	6
Yellow fever, personal experiences and reflections on, by Rudolph Matas.....	10

New Orleans Medical

and

Surgical Journal

Vol. 96

JULY, 1943

No. 1

IN MEMORIAM*

PAUL T. TALBOT, M. D.
NEW ORLEANS

In keeping with requirements and precedence, I am entrusted with the painful duty of presenting for your recognition a list of those members of our Society who have been called by the "Grim Reaper" since our last meeting. Would that I had the words and oratorical power and time properly to instill in your minds just how much their loss means to the medical profession and community and why we so sincerely mourn their departure.

With this thought in mind would it not be a wise admonition to cultivate a closer and more friendly relationship with each other during this short span of life, to the end that we may be able to have a better understanding of each other, professionally and socially. Basically we are all brothers in the flesh, having a common obligation designated by the degree of Doctor of Medicine. Thus we could share in a more personal manner, the joy and happiness of success and better succor and support in hours of misfortune. At such a time everyone needs a friend. We could thus be a support in the approach to the ranks of the passing stream, clothed with assurance and satisfaction so aptly expressed by the Biblical character, Paul, in his epistle: "I have fought a good fight, I have finished my course, I have kept the faith."

Yes, their passing could then be viewed like a glorious and glamorous sunset, the

sun falling lower and lower beyond the horizon, illuminated by a galaxy of colors and studded by the planets and stars, each attesting to some outstanding accomplishment or success in his career. They will shine long after the sun has fallen, precluding the approach of evening, followed by the darkness of night and the dawn of another day. Thus time passes on.

Many of these departed you and I have known; some intimately. We know how consecrated, sacrificial and devoted they were in their professional activities. We know how much they have contributed to the preservation of the American form of living—to the American form of practicing medicine. With these implications and edicts to halo their memory and in keeping with the spirit of the times, we should redouble our efforts to approach nearer the utopia in order that their principles and sacrifices may not have been in vain. The reflections learned from their contributions must be activated and utilized in the strengthening of our great calling. They would not have it otherwise. We realize their loss to the community both professionally and socially. In the confidence of their aggrieved patients they will be very hard to replace, and there will be a void space in our hearts when we reflect on their passing. They have left their imprints on the sands of time—what a profession!

In a group obituary it is impossible to portray the many individual outstanding characteristics of each life. A bibliographical sketch is recorded in the official files. If you will kindly stand, I will read the list of deaths for 1942-43:

*Memorial address read before the sixty-fourth annual meeting of the Louisiana State Medical Society, May 3, 1943.

Name	Address	Date of Death
Samuel A. Barkoff	New Orleans	1943
Thomas B. Bird	Baton Rouge	1942
George S. Brown	New Orleans	1943
Edwin A. Carlisle	East Point	1942
Harold G. F. Edwards	Shreveport	1942
John B. Elliott	New Orleans	1943
Charles J. Gordon	Sicily Island	1942
S. E. Graham	St. Francisville	1943
John K. Griffith	Slidell	1942
Gordon A. Grimland	Lafayette	1942
Noel S. Holmes	Eros	1942
Clifford H. Irion	Benton	1942
Alfred Jacoby	New Orleans	1942
David A. Lines	New Orleans	1942
Antoine J. Morat	Colfax	1942
J. Franklin Mouton	Lafayette	1942
A. J. Newman	Hammond	1943
Adolph Noha	New Orleans	1942
Malvin W. Owens	Bonita	1942
Fleator Palmer	Homer	1942
Frank P. Perret	Jeanerette	1943
Samuel H. Scruggs	Cloutierville	1942
J. Holmes Smith, Jr.	New Orleans	1943
Joseph B. Thompson	Bogalusa	1943
James C. Willis, Sr.	Shreveport	1942
Marshall W. Wooten	Mangham	1943
Henry B. Womble	Gilbert	1942
Wm. P. Yerger	Tallulah	1943

May their souls rest in peace.

o

ANCIENT PROCESSES IN A SCIENTIFIC AGE

THE DEVELOPMENT OF USEFULNESS*

C. ANDERSON ALDRICH, M. D.
CHICAGO

Every one who buys a valuable piece of machinery expects, as a matter of course, to look into the matter of how it is intended to work. That is the least one can do in order to make good use of his investment. To protect a machine from damage it is necessary to understand its internal workings. That is why automobile manufacturers, for instance, print colorful and detailed booklets of instruction telling new owners all the dos and don'ts about intelligent driving of a car. Before attempting any operation of a bright and shining new machine, we take it for granted that proper methods of starting, stopping, steering and

shifting gears will be learned. And we choose our fuel and lubricating oil with the greatest of care.

But when it comes to steering and operating a much more intricate mechanism like a human baby, we seem to take it for granted that no particular study or preparation is necessary—that papa or mama, or both, and sometimes the doctor, can step right into the driver's seat and always be right. We expect babies to be fool-proof. No wonder our behavior and child guidance clinics are cluttered up with the wrecks which result from this careless sort of driving.

Perhaps no other mistake hampers human progress as much as this idea that adults are inherently right in their management of children, no matter how little they have prepared themselves for their perplexing task. This conception has, in the past few generations, lead to the adoption of a complex set of rules and regulations for children which ignores almost completely the way in which human beings are built to run. The misunderstanding of children which results when they fail to respond to such regimes is a serious matter. It seems bad enough to have one member of a family misunderstood by the group; but, when two or three whole generations are misunderstood, the results are devastating.

There was possibly some excuse for this somewhat arrogant attitude during the years when we were "child centered" and as yet knew little about the subject of growth and development. But, now, with the generous provision of information on this subject which has come out in recent years, it is hard to see how any modern parent or doctor can approach his handling of children with anything but a respectful attitude. It surely is just as important for people to recognize the dynamic drives of babies toward adequate living as it is for the automobile driver to understand what happens when he steps on the accelerator of his car.

In this paper an attempt will be made merely to outline some of these growth

*Read before the Orleans Parish Medical Society, January 25, 1943.

tendencies and to consider briefly their implications in modern child care. Only some of the more obvious forces will be touched upon and cited as illustrations, and the actual steps of growth will be skimmed over rapidly in order to point out their useful nature.

In order to understand children, one must begin at the start and study the situation of the newly born. Each well-born child, as he emerges into the light of day, is nature's late model of *homo sapiens*, 1943. But, unlike the automobile producers, nature does not equip the chassis with all the latest gadgets; she grows these out during childhood. It is probably a fortunate thing for us that the forces of evolution do not modify yearly models with the greatest of ease. Nature sacrifices variety for stability, and in the place of structural changes, bequeaths our children with an amazing pliability in the developmental process. That is how it comes about that our modern babies, born in the image of primitive ancestral infants, are able to adjust themselves so well to a culture so entirely strange to them. This adaptability to change is one of man's most useful assets. It is this quality which has made possible the thin veneer of civilization which we have so painfully attained.

This conservatively modelled, but highly adaptable baby, is entirely mechanical at first, unable to perform any voluntary acts. Complex reflexes and behavior patterns which are designed to make him successful in his stern, early struggle for existence control his behavior. They supervise such important functions as breathing, eating, eliminating, and sleeping which, obviously, could not be entrusted safely to an immature will.

These baby acts, moreover, are intimately controlled by an active set of emotions which lie close to the surface and result in violent behavior at the slightest threat to the child's security. When an infant cries furiously because he is fastened or held too securely, it is his emotional signal of danger which brings on the outbursts, a protective reaction. These emo-

tions are extremely valuable from the start and will supervise much of his later activity as well.

On the other hand, voluntary behavior and conscious individuality become evident in a gradual way only after nerve axones become myelinated, a process which begins at birth and goes on throughout the growth period. In studying personality, therefore, this development of the nerves must attract our eager attention. This is the part of growth which leads to the usefulness of an individual. And it should be kept in mind, for the sake of good perspective, that most of this usefulness originates in the baby's brain and nervous system, rather than in that of his parents. It is also true, and this is our real challenge, that a child's ability to become competent depends to a considerable degree upon the sort of support that inherent growth gets from the environment. How parents, nurses and doctors react to the baby is of utmost importance.

With this background, let us see how our instinctive baby gradually takes over the voluntary control of his destiny. Although it cannot be scientifically proved, it is almost certain that the first voluntary act is fixation of the eyes on a familiar object, his mother's face for instance. In this barely perceptible act we can see the faint beginning of one of his most valuable functions, vision. This ability grows so rapidly that by four months of age it is a highly competent factor in conscious existence and is closely coordinated with many other systems of the body. By this time most of the intricate muscular movements which enable him to turn his eyes to objects and forms are already under voluntary control. However, the development of vision is not by any means complete, as it will continue building up its intricate brain connections for many years to come.

At some time near the end of the first month it is quite easy to demonstrate another welcome evidence of volition, the smile. The growth of this charming and useful attribute makes possible a baby's whole gamut of pleasant responses and initiates the sense of humor which develops

so rapidly that he can rollick with the best of us in just a few weeks. In later life this will be of great value as a safety valve in a world of struggle. Most of our great national heroes and leaders have had to be well fortified with a sense of humor in order to stand the strain.

Almost immediately after the appearance of the light touch, he starts to use his voice. No matter how unresponsive his surroundings, he begins to "oo" and "ah." Not only does he make sounds, but he sets about practicing his new-found talent throughout his waking hours. It is interesting to see how his lips and tongue work over articulation, often getting voice all mixed up with smiles. But he persists in his work until by the second year he can produce short sentences and say more words than we usually take the trouble to count.

Within a month or so of the time that speech begins, most babies make a start at controlling the muscles in the front of their necks so that they can crane their heads forward to investigate their surroundings. This simple act sets in motion a long series of voluntary postural changes which in rapid succession enable him to roll over, to sit, crawl, pull to a stand, walk with help, stand alone, and finally to walk off proudly following his protuberant stomach. All babies go through this orderly sequence in the art of going places whether or not we enter the picture.

At about four months of age babies begin their work at manual dexterity. At first they seem to see their hands, then gradually they get partial control over their gross movements. They reach out gropingly for rattle or bottle, then learn to grasp, control, and finally to manipulate familiar objects in relation to other things. After these large movements of the hands have progressed, the finer control of fingers comes under volition. In the latter part of the first year we see babies pointing their forefingers at a small speck, then acquiring the ability to bring the thumb in apposition so that the crumb can be picked up. This is an exclusively human accomplish-

ment and leads to our superior ability to fashion implements. By constant practice at combining coarse and fine movements, a baby in his second year becomes able to feed himself in a clumsy way with our sophisticated tools. But, more important still, he learns to play with toys, an activity which must be considered his only available way of working.

From what has just been said, it is obvious that before the first half year is over most of the abilities which make a child a useful member of society have emerged. During all the rest of his life these early strivings will continue to develop, though the speed of change will diminish as he grows older. It is precisely because of the rapid rate of early development that this age is so important, for at no other time is it so easy to promote or hinder his progress.

Along with this rapid acquisition of the tools for living in our culture, babies also develop from within a set of habits which stay with them for the rest of their days. The most important of these concern such vital functions as eating, eliminating and sleeping. And it is important to note that these fundamental habits are all built up by the same simple methods; the habitual act relieves discomfort and is therefore pleasant.

A baby first learns the joy of eating from the relief of hunger pains which follows his nursing. The rhythm of his eating habits is established and carried on by the rhythm of his inherent hunger mechanism.

An infant develops regular habits of elimination because uncomfortable distention of the rectum or bladder is relieved by evacuation of these organs. Here again, his own inherent rhythms determine the exact timing of eliminative efforts.

In the same way, a child becomes uncomfortable when he is tired, and seeks sleep as a pleasant relief. We find, also that the repeated sequences of awakening, activity, growing tired and falling asleep are rhythmic individual matters characteristic of each child.

In order to be useful to a person, then, vital habits must be constant repetitions of acts which are pleasant and relieving.

Going back to the original analogy, a brief outline has been given of how babies are "supposed to work" during their breaking in period. Can we get any suggestions from this as to how we should "drive the car?" It is certainly logical, if we are to get the most out of these growth forces, that we give emerging abilities a chance to expand and that we respect infantile attempts at habit formation.

Such a policy would have to allow early eating experiences to occur under the stimulus of hunger contractions rather than according to any routine or schedule dominated by the clock. It would likewise respect a child's ability to choose from a suitable diet the amount he desires to eat. In the realm of elimination, a careful driver would pay much more attention to the development of rhythmic bowel and bladder control in the baby than to the application of artificial stimuli and compulsions, enemas and suppositories. When it comes to habits of sleep in the early years, a considerate parent would see to it that sleep was allowed when the baby's lids began to droop, would pay strict attention to ideal resting environment, and would minimize such considerations as set numbers of hours to be spent in bed. We have every evidence from recent research that when babies are allowed to develop these habits without dictation, they emerge with a set of useful tools for everyday living.

In considering the management of emerging abilities, it is equally obvious that our sympathetic support is needed if maximum growth is to occur. The effects of environment on the development of a baby can be as beneficent as the spring rains or as devastating as the scorching sun in a drought. The secret of a favorable environment lies in developing an attitude on the part of adults which expects a child to act his age. This attitude not only should expect such behavior, it must be proud of it. The attainment of this state of mind might be called the pediatric approach to mental hy-

giene. It enables one to see each inevitable change in growth as a useful step toward competent behavior. It helps us to ignore the inadequacies of the preliminary steps in the light of steady progress toward the ultimate goal.

This attitude is needed most during the second year of life, in the well known "no-no" period. During this dynamic year every child is intensely busy with the job of perfecting the abilities which sprouted in the first year. As a result, he runs about prying, handling, investigating and generally getting under foot, making a nuisance of himself. When our best furniture and possessions are threatened, it is hard to realize that this behavior is necessary for future growth. Nevertheless, the evidence clearly shows that in order to help growth we must so change the surroundings that these developmental needs can be fulfilled. It is desirable that he learn to walk and run, to play with tops, to "help with the sweeping," to toss balls, to handle and manipulate, to call out and yell, to fit things together and to take them apart, and the only way by which he can learn is by incessant practice. This he demands.

The great lesson children have to learn at this age is selectivity—that this thing can and that thing cannot be done. If each lesson is taken alone, infants learn rapidly. But, when everything is thrown at them at once, they become confused and cannot learn.

It is also important that infants at this age continue to feel their early affection for their parents. This is fostered by adult approval and applause of childish efforts, no matter how unsuccessful these may be when judged by grown up standards. When parents lose this relationship they hinder the development of two-year-olds and set up the well known "negativism" of the three-year-olds.

One of the most important results of this tolerant attitude toward infant behavior is that it enables us to realize how growth proceeds in later years. We can see a purpose in nature's slow, step-by-step progress. We can understand how it is that children

read easily only after their brains have developed to the reading stage, rather than at any particular birthday. We can understand why handedness should be respected and not "changed." We can see that obedience should always be subservient to self-discipline. We can even become unemotional enough to understand that what we call masturbation in a baby is really only a stepping stone in sexual growth. And, finally, we may be able to approach the problem of our adolescents with the conviction that it is right for them to mature, proper for them to take on adult responsibilities, and desirable for them to love, mate and have children of their own—all his, even if it does relegate us to the status of old folks. If we can take this, then we too have really grown up.

HISTORY OF YELLOW FEVER IN NEW ORLEANS*

RUDOLPH M. LANDRY, M. D.
NEW ORLEANS

The time was the summer of 1905. The place was New Orleans—New Orleans, the gay, romantic Queen City of the South, noted for its charm, continental atmosphere, and good living. New Orleans, the terminus of the great Mississippi, the center of commerce of the Mississippi Valley, and where people did not let business interfere with pleasure too much. However, this July 12, 1905, was a date long to be remembered by those who had lived there for any length of time, for on that day a public announcement was made which heretofore was more fearful than the wail of the air raid siren of today. Another yellow fever epidemic had started. But let us look back that we may understand the significance and terror of this message.

In 1718 New Orleans was founded by Bienville in a bend of the Mississippi. At that time it was little more than a clearing at the side of the river, and was surrounded by swamp lands. The city grew, and in 1722 was made capital of the Louisiana

territory. During this time, and for five years thereafter, New Orleans suffered inundations of the Mississippi every year. A series of canals were built to the lake and a system of irrigation ditches was set up to relieve these floods. The first levee was erected in 1827, which protected the city from the river thereafter.

With this setting, New Orleans was an ideal spot for infection, disease, and pestilence. Due to its position on the river, it served as a great port, both for foreign vessels and river commerce. Its warm climate, surrounding swamps, and open ditches served as a perfect breeding spot for insects. In fact, since its very founding, New Orleans had suffered many epidemics—plague and smallpox were the most notable ones, but there were several others, the strangest of which was the epidemic of mad dogs. This odd situation was dangerous enough to keep people off the streets, and many deaths from rabies were reported. But New Orleans' greatest scourge, yellow fever, had not yet come. Although some cases had been reported in 1769 which might have been the "Yellow Jack," the first positive case was not reported until 1796. The exact source of this has never been fully determined, but today most people believe that the fever was brought to this country with slaves from Africa, although it might also have been introduced from infections picked up in the West Indies and carried here on merchant ships. At any rate, it had arrived. Fortunately, the epidemic did not prove to be a very serious problem; few were stricken, and the mortality was low. In fact, for 23 years afterwards no one worried about yellow fever very much. In 1819 the first severe blow fell. In that year the Yellow Jack struck in all its violence, there were 2,000 deaths that summer and fall in this city, then of 26,000 population. One-thirteenth of the people were killed in less than six months by this dread disease.

Thereafter, epidemics occurred in New Orleans with an "irregular irregularity"—a phrase used to describe auricular fibrillation, but a condition here even more dan-

*Read before the Orleans Parish Medical Society, July 13, 1942.

gerous. During the next 55 years there were about thirty-five epidemics, eleven of which struck a large percentage of the population and produced a high death rate. These did not come in alternate years, but sometimes hit for four or five successive years and then perhaps would skip two or three, only to return again the next. There was no predicting when the next one would strike.

Of course at this time the etiology and epidemiology were unknown, but the city board of health set up a quarantine to try to check the fever. The first quarantine was established in 1821 and continued through 1824. However, during this period, a yellow fever epidemic struck the city every year, so the quarantine was considered worse than useless and disbanded. Small wonder then that the doctors were at their wits end in trying to solve the problem. The disease was naturally thought to be transmitted from person to person by contact in some way, but here with the quarantine it was worse than before. What could it be? As with any baffling problem, a great many theories arose—some thought it was a "humeral" disease—others that barometric and thermometric conditions controlled it—and, of course, innumerable others.

After 1824, due to the most disappointing results, the quarantine was given up, and although the fever took its toll in many of the after years, it at least did not occur every year. The population had grown rather passive and almost fatalistic regarding the yellow jack, and most of the older natives had already had the disease and were immune to another attack. However, also during this time, the city was rapidly growing, and the new members of the community who were not immune were hard hit by the epidemics. In 1853 New Orleans had grown to a size of about 150,000. This summer the Yellow Jack struck its hardest blow and there were nearly 8,000 deaths. Citizens and doctors alike were frantic—but helpless. Patients were carefully treated, but with such a high death rate and no means of checking the disease, little hope was offered. Two years later it was

decided that they should return to the quarantine. This act seemed only to tease the "Yehudi" of his day, for he struck again that very year, and again in 1858.

To bring your mind back to the setting, New Orleans was still growing rapidly. Her reputation had been established, and people the world over were eager to visit, while many others saw it as a good business location and came to establish their homes. However, despite the glamour and romance of our fair city, New Orleans was dirty—filthy. Dr. Chaillé said regarding the sanitation of the city, "stagnant drainage, foul sewerage, environing swamps, ill and unpaved streets, no sanitary regulations, and filth, endless filth everywhere." These conditions, he said, were true until 1870 (with the exception of 1862 to 1865) when some slight improvements were made.

Then followed the War Between the States, and Admiral Farragut forced New Orleans to surrender in 1862. A new government was established under General Butler, who was so immensely hated that even the prostitutes are said to have pasted his pictures on the bottom of their slop jars. General Butler evidently ruled with an iron hand, and forced people here into a far different sort of life than that to which they were accustomed. However, despite his practices and actions, General Butler did have one redeeming feature, which he evidently passed on to his successors, Generals Banks and Canby. They ruled New Orleans from 1862 to 1866, and during this time it is said that the city was kept in a much cleaner condition than before, and than it was for many years following. And also during this time the city was practically free from epidemics. It must have seemed like the Yankee quarantine worked while the local ones did not. The exact details of the quarantine, and the cleaning up campaign were not given, but it may be assumed that simple general measures were taken. However, although the city itself suffered no epidemics, in 1864 there were 200 cases on board naval vessels in port, and 52 of the patients died. It is brought out that these boats were under strict quar-

antine and were more or less isolated when they were found to be infected.

In the year 1867, when the military rule had left and the quarantine was not enforced, the city suffered another severe epidemic with more than 3,000 deaths. The cause of the fever was still unknown, though it seemed to be fairly definitely established as a contagious disease, and much was written upon the cause and prevention.

In the following years, although there was some yellow fever, it did not occur in the vast epidemic form which was seen in 1853 and in 1867. In fact, the years from 1878 until 1897 were free of epidemics and the population held their breaths and prayed that it had gone to stay. However, they enjoyed no such luck, and in the latter year there was an epidemic with 300 deaths. The yellow jack also visited in 1898 and 1899, although the epidemics were not very severe in comparison to former ones.

In the next year, at the turn of the century, came the "eureka" that had long been waited for, and that was heard all over the world. It is not necessary to repeat the story that you all know so well—how Dr. Carlos Finlay of Havana persuaded Major Walter Reed that yellow fever was carried by the *Aedes aegypti*, or *Stegomyia fasciata* mosquito. And how Dr. Reed, with his immortal assistants, Drs. Lazear, Carroll, and Agramonte, together with volunteers from the United States Army and Spanish immigrants, proved without a doubt that Finlay's theory was correct. You all know of these heroic efforts, and how Lazear died and Carroll barely escaped with his life after voluntarily submitting to the bite of infected mosquitoes. Now the fear of the yellow jack could be reduced—but let us see.

In 1901 Gorgas decided to put Dr. Reed's experimental evidence to the acid test. Havana was the seat of endemic yellow fever and scarcely a day passed without at least one new case having been reported. Therefore, in Havana Dr. Gorgas began his anti-mosquito campaign, the methods of which are well known—screening, drainage, oil on water, and miraculously yellow fever dis-

appeared from Havana. Now it had been proved, both experimentally and practically, how yellow fever was spread and a definite way of checking this had been perfected. At last the tropics and sub-tropics could breathe easier. Of course there was a great deal of work to do but now they could remove this ever present danger—but could they? Yes, they could,—but they would not. Some skeptics and dyed in the wool veterans doubted what had happened. Also it would require a great deal of money to make the necessary improvements for mosquito control. We must remember that still in New Orleans, as late as 1905, the houses were not screened, there were open ditches, open cisterns were used, streets were unpaved, and, in short, it still served to breed the stegomyia as we grow staphylococci on agar in an incubator.

To return to our original setting—New Orleans, summer of 1905. (I might say that although the public announcement of yellow fever was not made until July 12, at that time there were over 100 cases and the doctors knew of its presence.) New Orleans had been free from the fever since 1899, and during that time a great many non-immunes had been added to the population. As Dr. Matas said, "all the elements were now assembled for another outbreak of the plague; human tinder in abundance, myriads of stegomyia mosquitoes to carry the incendiary torch from house to house and from man to man. All that was missing for the explosion was the match to light the first fire."

This match evidently came in the form of a sailor from South America. At any rate, when the public announcement was made on July 12, 20 deaths had occurred.

It must be said that Dr. Quitman Kohnke, who was the health officer of New Orleans had been very interested in Gorgas' work and had followed it closely. For the preceding three years he had begged and entreated for the city to carry on an anti-mosquito campaign, but in the absence of the fever, none had heeded his advice. The people of New Orleans had come to accept yellow fever, and believed it foolish to try and rid

the city of mosquitoes. Gorgas' accomplishments were only of academic interest they said.

But when the yellow jack struck, Dr. Kohnke, aided by the State Board of Health and several other organizations, started their anti-mosquito campaign, and on August 8, the Public Health Service took charge and continued their work. At this time there were already 616 cases of the fever and it could be seen clearly that the invader had secured a foothold. However, Dr. Joseph White, head of the United States Public Health Service here took charge and systematically began to rid the city of mosquitoes. The city was divided into sections, each with a medical officer in command, several medical assistants, inspectors, screeners, fumigators, and tenders of supplies. These men went from house to house and reported cases of fever and also breeding spots for mosquitoes. The amount of work to be done was enormous. Most of the houses depended upon cisterns for their water and all of these cisterns had to be screened and oiled. Stagnant pools must be flushed or oiled and gutters treated in the same way. Houses must be screened, especially those in which yellow fever had hit a member of the household. Where patients with yellow fever could not or would not leave home for the isolation hospital, they were kept under mosquito bars and all rooms in the house were sealed and then fumigated to destroy any mosquito present.

However, with all of these measures, and though they received support and praises from the leading citizens, some people were still reluctant to join the "stop the stegomyia" campaign. It must be said that most of these came around to "see the light" after a little propaganda, and on the whole the citizens showed excellent cooperation. To illustrate this Dr. Bruns told the story, as quoted by Dr. Matas, of the "hard-headed old Irish woman who refused to allow her cistern to be oiled. When finally persuaded by one of the most diplomatic of the foremen, she exclaimed, 'Well, come in and do it if yez is bound to, but I don't believe yez can keep the Lord from getting

those He wants by putting a little ile on the cisterns.' " Nevertheless, there were still some who refused to accept these measures and for the benefit of these an ordinance was passed by the city council to make it unlawful for property holders to interfere with the Board of Health's campaign against the mosquito.

At any rate the preventive measures were most successful and after August 12, the number of cases began to decline and the epidemic was stopped completely in November. It must be remembered that all previous epidemics had continued until the first frost, in December. If the number of cases by the 12th of July had paralleled the record of previous epidemics, it is estimated that the toll would have been higher than 30,000 cases with 4,000 deaths.

This victory over the yellow jack was not significant to New Orleans alone, but the entire Southern United States, where this peril was also prevalent. It is said that the first victory over yellow fever was in Havana in 1901, the second and greatest in New Orleans in 1905.

In this brief and sketchy history of yellow fever in New Orleans, the climax has been reached, but the story has not been completed. Although it is true that we have had no yellow fever epidemic since that in 1905, "the human tinder is still in abundance, and the myriads of stegomyia mosquitoes are still ready to carry the incendiary torch." It is true that New Orleans is a much more sanitary spot today than it was in 1905, but there is still plenty room for improvement. The stegomyia is a city mosquito and these little devils are responsible for most of the stings suffered by our fellow townsmen today. And so if the yellow jack did find its way here, there would be plenty of transportation and a great many available residencies for it. Therefore, we must not be caught sleeping at the switch, but must keep on the alert to prevent the disease from ever getting a start. We now know most of the secrets of this yellow peril even though we have never seen him. And with this knowledge comes

also the information necessary for keeping him out.

Thirty-seven years have elapsed since that miraculously bloodless battle of 1905, the victory that delivered us from the thrall of the Yellow Jack. During these years, the peace, health, and prosperity in which we have lived have tended to make us oblivious of the anguish of the past and lulled us into a false sense of security which our present knowledge of yellow fever in connection with the vast expansion of aerial communication and transportation scarcely justifies. Yellow fever is not dead, but is still smouldering, particularly in the jungles of South America. Although epidemics in the larger cities are rare, they do occur, and Rio de Janeiro was hit within the last 15 years. We have now learned that there are two types of yellow fever, both identical in their clinical manifestations, but entirely different in their origin, habitat, and mode of propagation. We still have the classical yellow fever of the tropical, sea bordering countries, transmitted solely by the *Stegomyia*, causing epidemics relatively easy to control by the destruction of this urban, social, domestic, sweet water mosquito; on the other hand, there is the wild, savage, jungle type of yellow fever which flourishes in the wilderness among the wild animals of the forest like an epizootic and is transmitted by not one but by many varieties of mosquitoes which live in trees and challenge all the methods of mosquito extermination that Finlay and Reed devised, and Gorgas and his followers so successfully applied in Havana, New Orleans, and Panama and all the sea ports of the tropics.

In preventing the disease from reaching our cities, our ships are not a great problem due to the quarantine maintained over them and the mosquito control observed on board, but our airplanes may serve as carriers. The health authorities recognize this danger and eliminate it by a thorough spraying of planes from South America and other potential foci. And so we here today may feel safe from this scourge as long as we maintain our vigilance, but let up hope and pray that we will never forget

our lesson and open our portals to the Yellow Jack.

It is of current interest to note that members of our armed forces who are stationed in or near potential yellow fever areas are routinely vaccinated against this disease. This is the only specific treatment that has proved of value, and it is to be hoped that this precaution will be 100 per cent effective.

In conclusion, although our fair city bears memorials to Jackson, to Lee, Beauregard, and other military heroes, it would be more than fitting to immortalize the names of those who were responsible for the greatest and most important victory that the city has ever achieved. In the medical library of Louisiana State University is such a memorial to these men—Finlay, Reed, Lazear, Carroll, Agramonte, and Gorgas—they are real heroes of New Orleans, and to them we are deeply indebted for triumphing over our greatest enemy—yellow fever.

BIBLIOGRAPHY

- Augustin, George: History of Yellow Fever, Searcy and Pfaff, Lt. New Orleans, 1909.
 Chaillé, S. E.: Yellow Fever, Sanitary Conditions and Vital Statistics of New Orleans. 1862-1865. Article No. 11.
 Matas, Rudolph: Special Articles on Yellow Fever, Graham, 1897.
 Matas, Rudolph: The Campaign against Yellow Fever and the Victory of Sanitary Science, Guided by Experimental Medicine, in New Orleans, in 1905.
 Soper, F. L.: Rural Jungle Yellow Fever, A New Public Health Problem in Colombia. Lecture given before the Faculty of Medicine of Bogota, April 5, 1935.

—o—

PERSONAL EXPERIENCES AND REFLECTIONS ON YELLOW FEVER*

RUDOLPH MATAS, M. D.
 NEW ORLEANS

I thank you, Mr. President, for the compliment of your invitation to speak on yellow fever, the subject of Dr. Landry's interesting essay; a topic so appealing to my personal experience and so enduring in its interest to New Orleans' doctors.

Despite the fact that dissertations on yellow fever have become somewhat threadbare and are regarded largely a matter of history or of purely academic interest by the members of the profession who have

*Read before the Orleans Parish Medical Society, July 13, 1942.

had no personal contact with the great yellow plague,—it is pleasing to us surviving veterans of the great Sanitary Victory of 1905,—to hear memories of a seemingly dead past revived and reviewed by the young of the profession. And it is right that this should be so, if only to remind the present and coming generations of Orleanians of what medical science has done to deliver them from the tyranny of a monstrous pestilence, and, thereby, secure for them the health, the happiness, and the ever growing prosperity that they, our people, are enjoying today.

* * *

If there is one thing that is true, and the only thing that may be good about yellow fever, it is that if you survive one attack, it never bothers you again for the rest of your days. At least, that is the rule, and it is because my personal experience seems to be so contrary to this rule that the story of my dealings with yellow fever may be worth telling.

* * *

New Orleans—1867. First Attack. Speaking of my personal experience, may I say that my interest and personal contact with the yellow plague go as far back as the epidemic which swept over the city in 1867, when I was seven years old. This gave me a claim to the title of “immune”, which was indeed an asset of inestimable value to all of its possessors, and particularly to doctors whose usefulness in all yellow fever countries chiefly depended upon this qualification.

The Charity Hospital in 1878—Second Attack. It was confidence in my immunity that made me fearless of the disease when I was an undergraduate intern at the Charity Hospital during the devastating epidemic of 1878. The recollections of that tragic year remain for all time vivid and inextinguishable. Our entire resident staff was laid low and disabled at the outset; my roommate died. For a time, I was alone making rounds in wards crowded with the sick and dying, yet I was, seemingly, impregnable to the infection. Late in September, when the virulence of the epidemic had

abated, I was taken suddenly ill and put to bed with a fever that a beloved teacher and great authority (Professor Bemiss) declared was yellow fever. I recovered rapidly with no complications and again won the prized title of “immune”, for the second time in eleven years.

Havana in 1879, and the First U. S. Yellow Fever Commission. Third Attack. It was this distinction, I am sure, that made me eligible the following year, 1879, (while still an undergraduate intern at Charity Hospital) to serve in Cuba as clerk and laboratory assistant to the first yellow fever commission sent by the United States to Havana under the chairmanship of our great Dean, Dr. Chaillé, to investigate and report on the sanitary condition of Havana and the Island of Cuba. There, after four weeks of constant contact with fellow fever in the hospitals and morgues of Havana, I was taken suddenly sick with a fever of short duration, which the experts of the commission believed was yellow fever despite my previous two attacks in New Orleans. Whether right or wrong, the diagnosis was made and remained as a distinction of my “immunity”, for the third time.

Brownsville, Texas—1882. Fourth Attack. But that is not all, for in 1882, I had barely settled in practice here, at home, when I received an urgent call from the City Council of Brownsville, Texas, to assist the local profession in controlling an epidemic of yellow fever which had spread over both banks of the Rio Grande on the American and Mexican sides of the river. Owing to the great strain of night and day calls for relief, I was tired and exhausted, but otherwise in vigorous health. I regarded myself as absolutely immune to yellow fever, and I was surprised when I was suddenly seized with an acute fever of short duration, with no typical symptoms, which my colleagues, however, quickly diagnosed as yellow fever. As in previous attacks, my recovery was prompt with no residual disability. But the attack, whatever it was, had sufficed to give me the extraordinary title of “immune” for the fourth time in fifteen youthful years.

You may well judge by this experience that I have good reason to claim a close and rather kindly acquaintance with yellow fever, since I have seemingly spared no less than four times from the deadliness of his embrace.

CARLOS FINLAY—HAVANA, 1879

Incidentally, it was in Havana while working in the laboratories of the Yellow Fever Commission that I first met Dr. Carlos Finlay, the immortal scientist, who later discovered the transmission of yellow fever by the mosquito. This was in 1879 and he was already known as an eminent and tireless investigator. He had not yet begun the studies on the mosquitoes of Cuba, which led him to pick out the *Stegomyia* (*Aedes aegypti*) out of eight hundred varieties of mosquitoes, as the specific transmitter of yellow fever. Little did he or I imagine that sixty-two years later (1879-1941) I was to return to Havana and represent the city of New Orleans at a great international celebration in commemoration of the 108th anniversary of his birth,—to bring the homage of New Orleans—one of the first cities in America to benefit by his discovery and one of the last to recognize its debt to his genius.

WILLIAM C. GORGAS—BROWNSVILLE, 1882

I am also glad to recall that it was during the epidemic at Brownsville, Texas, in 1882, that I first met Dr. William Crawford Gorgas, then Lieutenant M. C., U. S. A., who had been assigned to that post immediately after his graduation at the Army Medical School. He had never been in contact with yellow fever, and it was not long after his arrival that he was stricken with a severe attack of the prevailing (yellow) fever. It was during this illness that I called on him as relief physician and assistant to a mutual friend, Dr. Melou, the contract surgeon of the post. As the outcome of this bedside acquaintance, a friendly relation was established which he remembered to the end of his glorious career. There were beautiful traits in his character which gave charm to his personality; but it was yet too early to foresee the path which, twenty years later, was to lead him to the pinnacle of

fame as the "conqueror of yellow fever" in Cuba and Panama by his mastery of the principles and practice of sanitation by mosquito eradication.

DIAGNOSTIC RESOURCES OF THE PAST AND PRESENT CONTRASTED

In this connection we become aware of the immense progress accomplished by scientific research since 1905, when we realize that at that time the diagnosis of yellow fever was based almost exclusively on the clinical picture. In all mild, isolated, atypical, and complicated cases, outside of epidemic areas, the diagnosis was speculative, uncertain, and controvertible. It was not until 1927 when it was discovered that the yellow fever poison was a filtrable virus, directly transmissible by inoculation to rhesus monkeys (Stokes et al.), white mice (Theiler, 1930), that a specific diagnostic and practically infallible test of susceptibility and immunity to yellow fever was devised by utilizing the white mouse as a test animal,—the "mouse protection test" of Sawyer and Lloyd. (1933)*

How quickly this relatively simple test would have told whether my four alleged attacks of yellow fever were genuine reinoculations,—*de novo* attacks of the disease, or merely accidental and innocent fevers which had no causative relation to yellow fever.

The conclusive demonstration of a specific and unmistakable histologic lesion of the liver in yellow fever (Hoffman, Havana, 1920-25), which could be readily demonstrated without general autopsy, by extracting a specimen of liver with a special trocar,—viscerotome (Sawyer and Lloyd, 1934) gave a new and immense impulse to the study of the epidemiology of the disease.

By these tests the past or present existence of yellow fever in the living and the dead can be determined not only in indi-

*The opportunity to test the permanent protective value of the blood of a human subject immunized to yellow fever, by a previous attack, is being considered by the author in connection with the "mouse protection test"—the results to be reported later in a supplementary note.

viduals, but in whole populations when exposed to the disease.

When we recall the often bitter wrangles over the clinical differentiation of mild and atypical yellow fever patients, and the unseemly disputes among experts on the true nature of the lesions exposed in the dead house,—how thankful we of the present should be for the heroic and self-sacrificing medical pioneers, who in the experimental laboratories in tropic regions have done so much to give precision and certainty to the unaided senses of the clinician and sanitarian.

AVIATION AND YELLOW FEVER

Dr. Landry has laid stress on the potential danger of future visitations of yellow fever by the aerial transportation of virulent jungle mosquitoes, besides many wild animals (marsupials and rodents) known to be normal virus carriers in the jungle, which could readily contaminate our, at present, virus-free *Stegomyia*. To his just alarm I would add my own conviction that the danger of importation will be made surely greater by the vast increase in the aerial traffic between New Orleans and the contaminated countries south of us after the war.

VACCINATION: WARNING TO SANITARIANS

On the other hand, it is comforting to know that the progress of science has anticipated the present emergency created by aviation, for we now have provided for our safety a vaccine that is protective against the virus of the disease whether it be urban and social, or savage and of jungle origin. While it is evident that all the exposed populations of the world cannot be vaccinated, it is possible that our armies destined for service abroad, and other civilians most exposed, can be so protected. Meantime, the responsibility for preventing an outburst of yellow fever in New Orleans or on the continent, rests upon the sanitary authorities of the city, state, and nation, who should be as diligent in the destruction of all mosquitoes and other insect vectors of yellow fever and other diseases transportable by aircraft, with as much thoroughness

as that applied by their ancestors to the fumigation and disinfection of ships engaged in the trade of tropical seas.

Now, more than ever, eternal vigilance is the price of safety!

DISCUSSION

Dr. Clyde Brooks (New Orleans): I want to speak a word of appreciation and felicitation to the Society on this very interesting paper and unique experience told by our honored fellow, Dr. Matas, who can still speak with so much knowledge and authority of his personal and intimate contacts with Finlay, Gorgas and other conspicuous heroes of these campaigns.

We have a society at L. S. U. called the "Gorgas Medical Society." In that society we call attention to the noted work of Gorgas in connection with yellow fever. Another chapter of this society is in the School of Medicine, University of Alabama. We are enthusiastic about the study of yellow fever and heroes of medicine associated with the conquest of yellow fever.

We are fortunate to know a man like Dr. Matas who has been in this work and has wrestled with the enemy and has conquered.

COMMON DISEASES AND INJURIES OF THE EYE

GEORGE M. HAIK, M. D.*
NEW ORLEANS

There is no branch of specialized medicine that is more closely correlated to the general practice of medicine than ophthalmology. So many diseases of the eye are simply local manifestations of some constitutional disease as tuberculosis, syphilis, gonorrhea, diabetes, arteriosclerosis, renal disease and focal infection.

The primary efforts of any eye physician are directed toward conservation of vision and the prevention of blindness. It can, therefore, be readily seen that the most important factor in the successful treatment of any ocular disease is the early institution of proper therapy. This may be accomplished only by the close cooperation of the general practitioner.

I wish to emphasize some of the ophthalmic problems that are encountered daily by every practitioner, whether he be engaged

*Major George M. Haik, M. C., now on duty with the 64th General Hospital, Fort Jackson, S. C.

in general practice or some special branch of medicine.

EYE DISEASES OF THE NEWBORN

(a) *Inflammatory diseases*: Acute conjunctivitis may be chemical, catarrhal or gonorrheal in origin. In the treatment of chemical conjunctivitis one should be careful not to employ too strenuous measures. Argyrol may lengthen the course of the disease by causing the lids to stick together, thus damming up the secretion. Used over a long period of time it may produce argyrosis. Gonorrheal conjunctivitis, however, calls for prompt and energetic treatment and the best possible nursing care, as many of these eyes sustain serious and permanent damage. Frequent irrigation is imperative. Dacryocystitis is seen fairly commonly in babies. It is sometimes mistakenly diagnosed as conjunctivitis. Pressure over the lacrimal sac causing pus to exude from the punctum establishes the diagnosis. There is also the characteristic watery eye and the so-called lacrimal conjunctivitis.

(b) *Injuries occurring during delivery*: Obstetricians should be particularly careful to prevent direct injury to the child's eyes in application of instruments during delivery of what may appear to be a minor external injury to the lid or a subconjunctival hemorrhage may cause irreparable damage to the eye. Pressure on the skull in difficult extractions or badly applied forceps may produce injury to the occipital cortex and base of the brain with hemorrhage and concussion, causing total blindness or damage to the ocular nerves. Injury to the base of the brain produces ptosis, squint, and other conditions. Ptosis also occurs in spontaneous deliveries.

CONGENITAL AND HEREDITARY ANOMALIES

This group of cases is responsible for many instances of blindness and presents a difficult problem to the physician and oculist. It includes congenital cataract, squint, dislocated lens, albinism, retinitis pigmentosa and interstitial keratitis, choroiditis and optic atrophy due to congenital syphilis. While many of these may not be cured, some of them are at least

amenable to treatment to the extent that the pathologic processes may be retarded. Cervical sympathectomy has been effective in some cases of early retinitis pigmentosa, not as a curative agent, but as a means of conserving the remaining vision. Proper antisiphilitic treatment of the mother during pregnancy cannot be overemphasized as an effective measure in preventing eye diseases due to congenital syphilis.

EYE CONDITIONS OF EARLY CHILDHOOD

(a) *Eyestrain*: The indifference with which eyestrain is considered is difficult to understand. The relief of eyestrain and the prescription of glasses is all too often treated as a matter of routine, when in reality, it is a medical problem. Aside from the errors of refraction, it should be interpreted as an impairment of function, frequently of important diagnostic value. This condition may be manifested by headache, nervousness, irritability, blurring of vision, blinking, itching and difficulty in getting along in school.

(b) *Squint*: The family physician or pediatrician is usually the first to observe the cross-eyed child. It is to be regretted that even today some practitioners believe that children outgrow this deformity and advise watchful waiting, stating that the child is too young to wear glasses. The possibility that the child will outgrow the defect is so slight that it should never be considered, because the percentage that correct themselves is so small. No child is too young to receive some form of treatment. Furthermore, if care is not instituted early the sight in the squinting eye may be partially or even completely lost. Most children with crossed eyes can be cured by glasses, muscle training, operation or a combination of these methods, if they are placed in the proper hands at an early date. Successful treatment of squint does not mean simply that the appearance of the patient has been improved, but vision in both eyes is good. Aside from the visual handicap, it is certainly an injustice to the child with strabismus to allow him to grow up among his friends and suffer the psy-

chologic effect of such a noticeable cosmetic defect.

(c) *Congenital cataract*: Another problem caused by procrastination on the part of the parent or medical adviser is the case of congenital cataract of sufficient size appreciably to reduce vision. The belief, though erroneous, still holds in some circles, that congenital cataract should not be removed until the child is six or eight years of age. On the contrary, if these congenital cataracts are not removed early enough the development of vision is retarded and permanently reduced. It is a substantial fact that up to four years the chances of developing normal visual acuity are good, from four to seven they rapidly decrease and after nine years of age they are most doubtful.

EYE MANIFESTATIONS OF CONSTITUTIONAL DISEASE AND FOCAL INFECTION

There are few systemic diseases or focal infections, which if present for any length of time, do not produce some ocular change.

There are those changes which may be the result of absorption of large amounts of chemical toxins, such as alcohol, tobacco, arsenic, lead, quinine and dinitrophenol. Some produce neuritis and swelling of the optic nerve. Dinitrophenol, which has been widely used as a reducing agent, produces cataract.

Most physicians are familiar, I am sure, with the loss of vision which sometimes accompanies the toxemias of pregnancy, uremia and diabetes. These are believed to be toxic and metabolic in origin.

Diseases of the teeth, tonsils, sinuses, gastrointestinal tract and genito-urinary tract are sources of eye disease. It is believed that the most frequent route of transmission is through the blood stream (Dutrey).

Vitamin deficiencies, particularly A, C, D, B₁ and B₂ are believed to be responsible for some structural and functional changes in the eye. These may be retrobulbar neuritis or cataract.

Retinal hemorrhage is the most common manifestation of vascular disease. It may

occur in the anemias, high blood pressure, arteriosclerosis, renal disease and heart disease.

INJURIES

Trauma to the eye is frequently associated with trauma to other parts of the body and the physician caring for the other injuries is usually the first to see the patient. Unless injuries to the eye are promptly and properly cared for a minor injury may result in a bad looking scar or loss of eyesight.

Contusions usually respond satisfactorily to compresses. Penetrating wounds are commonly caused by flying particles of steel, cement, glass or wood. Such injuries require immediate attention and the first treatment may be the deciding factor between eyesight and blindness. Not infrequently these foreign bodies lodge in the cornea, producing abrasion of the corneal epithelium and open up the way for bacterial infection. Patients with injuries such as lacerations of the lids and intra-ocular foreign bodies should be hospitalized immediately. The repair of eye injuries requires skill and patience. Often, careless and hurried suturing necessitates plastic surgery later on and this is never as effective as a proper primary repair.

Antitetanic serum should be administered, free drainage maintained, the wound kept clean and the patient kept at complete rest. On this regime patients with eye injuries recover in a shorter time with less scarring and better visual results.

Burns: It is believed that a large percentage of visual loss might be prevented by the proper treatment of acid and alkali burns.

Whenever the burn is due to acids or chemicals the best first aid treatment is to lay the individual on his back and thoroughly irrigate the eye, lifting the lids and enabling the water thoroughly to irrigate the eyeball. If nothing else is possible the head can be put in a pail of water and the eyes opened and rotated so as thoroughly to cleanse them of acid. The neutralizing agents to use in alkali burns are zinc sul-

phate and dilute acetic acid. Zinc sulphate is readily obtainable at any drugstore. It acts with sodium hydroxide producing sodium sulphate and zinc hydroxide. Proper and quick neutralization is the essential treatment and by quick neutralization is meant that received a few seconds after the caustic has entered the eye.

For acids the same measures are stressed, using as a neutralizing agent sodium bicarbonate. This should be followed with pontocaine and olive oil.

Because of the severe pain involved, the use of pontocaine or some other local anesthetic should be immediately used, and following cleansing and neutralization olive oil is instilled into the eye and cold compresses applied.

One fact should be emphasized, that all injuries, regardless of the type, should be treated primarily for the retention of vision and prevention of infection.

CONDITIONS OCCURRING MOST FREQUENTLY IN MIDDLE LIFE AND LATER

(a) *Presbyopia*: This is not a disease but a physiologic process occurring in most individuals forty years of age and older. It is thought to be due to a disturbance of nutrition in the tissues of the eye just as occurs in other parts of the body in individuals who have reached middle age. Such individuals may continue full activity with properly fitted glasses.

(b) *Glaucoma*: This may cause almost complete blindness without any pain or redness of the eye, the only complaint being disturbance of vision. The importance of early recognition of glaucoma cannot be over emphasized, as it is responsible for far too much of our present blindness.

Atropine is frequently used in these cases with inflammatory reaction or in injuries of the eye. It is often the precipitating factor in the production of glaucoma, if not already present. If there is the smallest doubt in your mind as to whether atropine should or should not be used, homatropine may be substituted with safety because its effect may be controlled while that of atropine cannot be controlled.

(c) *Cataracts*: Many erroneous impressions are conveyed concerning cataract. They not only impair vision but cause blindness. Many individuals have cataracts which are sudden in onset. The belief that these cannot be removed until they are so to speak "mature" is an old idea and not in keeping with the present day thought. Cataracts may be removed during any stage of their development. I prefer to do this when an individual cannot carry on full activity. There is, however, a type of cataract which develops so slowly that the visual acuity is never impaired to the extent that operation is necessary.

SUMMARY

Every individual with cataract should have the benefit of a complete medical study in order to determine the cause and best plan for treatment. Here again, we must be on the lookout for glaucoma so frequently seen in hypermature cataract.

GLOMERULONEPHRITIS*

EDGAR HULL, M. D.†
NEW ORLEANS

More than a hundred years ago Richard Bright expressed humiliation that a cure for nephritis had not been found. Today Bright's confession must be repeated. Not only has no cure for the disease been discovered, but its pathogenesis is still uncertain, and the genesis of all its symptoms is not entirely clear.

ETIOLOGY AND PATHOGENESIS

The fact that bacterial toxins, particularly toxins of hemolytic streptococci, are concerned in the causation of glomerulonephritis is well established, but the mechanism by which the toxins induce nephritis is uncertain. The latent period between the height of bacterial infection and the appearance of nephritis precludes the possibility that the toxins seriously injure the kidney directly. It has been hypothesized that

*Read before the Orleans Parish Medical Society, December 14, 1942.

†From the Department of Medicine, Louisiana State University, School of Medicine, New Orleans.

nephritis is due to the development of hypersensitiveness of kidney tissue to bacterial toxins which are in intimate contact with renal tissue during the process of their removal from the body, or that in some way the development of nephritis is tied up to antibody formation. Recently Schwentker and Comploier¹ have presented a reasonable concept of an antigen-antibody mechanism as the cause of glomerulonephritis, which is supported by certain experimental and clinical observations. Bacterial toxins produce slight kidney damage, resulting in the entrance into the blood stream of substances derived from the injured renal cells. These substances act as antigens, and cause the development of specific antibodies which are destructive to kidney tissue. Progressive nephritis from a single infection could be produced by this mechanism, and exacerbations of nephritis would be expected to follow recurrent infections.

SYMPTOMS AND COURSE

The genesis of most of the symptoms of nephritis is moderately well understood. The urinary abnormalities are due to increased permeability or to rupture of glomerular capillaries.

The other prominent symptoms, any one of which may be absent, are edema, hypertension, convulsions, and in cases of progressive disease, evidence of impaired renal function, renal insufficiency, and uremia. The edema of acute nephritis has been considered to be due to increase of the permeability of systemic capillaries to protein, allowing escape of serum protein into tissue spaces, increasing the protein content and hence the osmotic pressure of the interstitial fluid. Recent studies by Warren² in which the protein content of edema fluid from the patients with acute nephritis was found not to be increased, casts doubt upon the operation of this mechanism. It seems likely that one factor in the genesis of edema in acute nephritis is salt retention which results merely from diminution in the output of water by the kidneys.

It is quite definitely established that much of the edema in acute nephritis is due

to heart failure. Most patients with severe nephritis have cardiac enlargement, gallop rhythm, and markedly increased venous pressure. Heart failure results from acute hypertension and perhaps also from acute toxic damage to the myocardium. Edema due to heart failure also occurs in chronic cases which have had hypertension for a long time.

A third factor, depletion of the plasma proteins resulting from albuminuria, also operates in the production of edema in the cases which are classified as subacute. This factor produces what is called the nephrotic stage. Thus the edema of nephritis may be due to salt retention resulting from oliguria, to heart failure, or to prolonged albuminuria. All these factors may operate in the same patient at the same time or at different times.

Hypertension is attributed to diminished blood flow through the engorged kidneys. Convulsions are related pathogenetically to the hypertension, although their exact genesis is not clear. They are not due to uremia, which is uncommon in acute nephritis, and are probably not due to edema of the brain. Uremia, which is the terminal event in most cases of chronic nephritis, is due to progressive destruction of kidney parenchyma.

THE ROLE OF SALT IN EDEMA

The total amount of water in the interstitial spaces is dependent upon the total amount of sodium in the body, practically all of which is in the tissue spaces. Retention or administration of salt, therefore, tends to cause edema, while the interdiction of salt tends to cause dehydration, irrespective of the amount of water which is supplied. The last statement applies even though no urine at all is being secreted. In such a circumstance sodium is gradually lost by other routes, and dehydration results even though large amounts of water are given. The tenacity of the animal organism in maintaining a constant concentration of sodium in the tissue fluid is a fundamental factor which must be considered in the treatment of all diseases in which edema or dehydration is apt to occur.

PREVENTION

Much nephritis might be prevented if streptococcal infections, particularly infections of the throat, could be promptly controlled. Although there is no good evidence that the course of ordinary streptococcal tonsillitis is shortened by sulfonamide therapy, it is certain that such therapy diminishes sharply the number of colonies which may be obtained by throat culture. The use of sulfanilamide in moderate dosage would therefore seem to be indicated, not only to prevent nephritis but also the other complications of tonsillitis, such as middle ear disease and rheumatic fever. Tonsillectomy, perhaps preceded by a short period of therapy with sulfanilamide, is also indicated for persons who have had repeated attacks of acute tonsillitis.

TREATMENT

It is not unreasonable to suppose that the use of sulfanilamide, by reducing the numbers of streptococci which are harbored in the throat, might be beneficial during the course of acute nephritis. A recent report by Williams, Longcope, and Janeway³ suggests that the acute phase may be shortened and progressive disease sometimes prevented by the use of sulfanilamide in moderate dosage. These authors also recommend tonsillectomy, preceded and followed by treatment with sulfanilamide after the acute manifestations have disappeared. Sulfanilamide rather than any of its derivatives is used because of the almost complete absence of kidney damage due to sulfanilamide itself.

Otherwise the treatment of nephritis consists of measures to prevent and to control symptoms. Edema may be minimized by salt restriction; salt should be completely interdicted if marked edema is present. Fluid restriction is unnecessary, but there is no reason for the forcing of large amounts of fluid. Heart failure is to be handled by conventional measures. The value of blood letting in acute failure with dyspnea is not to be forgotten. Some of these patients have large amounts of edema fluid in the pleural cavities, which

increase dyspnea by causing compression of the lungs; such large effusions should be removed.

Convulsions may be prevented by the use of sedatives in patients with very high blood pressure, and particularly if restlessness, headache, or muscular twitchings occur. Magnesium sulphate is popular for this purpose, but it is unlikely that its effect is superior to that of the barbiturates.

Depleted plasma proteins in the subacute or nephrotic stage cannot be restored permanently by any means now available. Theoretically diets high in protein should help, but actually they do not cause appreciable change in the levels of the serum proteins. Transient elevation of the proteins and sharp diuresis may be produced by the intravenous injection of large amounts of concentrated blood plasma. The temporary effect of such injection limits its usefulness to cases with marked edema which persists in spite of drastic salt restriction.

As has been indicated, the only effective method of preventing renal insufficiency in the presence of marked impairment of kidney function is to increase the intake of fluid, and thus the output of urine. The damaged kidney compensates for diminution of its concentrating ability by the secretion of a larger amount of dilute urine; ample water must be supplied, lest the amount of urine fall below that needed to remove from the body adequate quantities of urinary constituents. It is not uncommon for persons with damaged kidneys to develop uremia because they are not getting enough water; conversely, in some persons uremic symptoms will clear up when sufficient water is given to increase the output of urine. It should also be remembered that patients with chronic glomerulonephritis also have hypertensive heart disease, and that the onset of cardiac insufficiency may precipitate uremia. In such cases digitalization may cause disappearance of the uremic manifestations. Some persons who have burned out chronic glomerulonephritis with marked impairment of kidney function

will live for years if close attention is given to the status of their circulation and if they take adequate fluid.

SUMMARY

Glomerulonephritis is probably due to an indirect effect of bacterial toxins upon the kidneys, by a mechanism which is not entirely clear. Its principal manifestations are:

1. The presence of abnormal constituents in the urine, chiefly albumin and erythrocytes.
2. Edema, which may be due to salt retention, to depletion of plasma proteins, or to heart failure.
3. Hypertension.
4. Impairment of renal function, which eventually leads to uremia in chronic progressive cases.

It may possibly be prevented by proper chemotherapy of acute infections and by the removal of chronic or recurrent foci of infection.

There is evidence that the use of sulfanilamide may be beneficial in the early, acute stages. Treatment otherwise consists of measures to minimize edema formation, to prevent convulsions, to relieve cardiac failure, and to attempt to postpone the onset of renal insufficiency.

REFERENCES

1. Schwenker, F. F., and Comptoier, F. C.: Production of kidney antibodies by injection of homologous kidney plus bacterial toxins, *J. Exper. Med.*, 70:223, 1939.
2. Warren, James V.: Capillary permeability as determined by the protein content of edema fluid. Studies in normal subjects with venous congestion and in patients with acute nephritis, *J. Clin. Invest.*, 21:640, 1942.
3. Williams, R. H., Longcope, N. T., and Janeway, C.: Use of sulfanilamide in treatment of acute glomerular nephritis, *Am. J. Med. Sci.*, 203:157, 1942.

DISCUSSION

Dr. John S. LaDue (New Orleans): I would like to ask Dr. Hull a question about the controversy of doing tonsillectomy while there is any evidence of active disease of the glomeruli, if only to have it clarified in my own mind. It has been frequently stated that this procedure is contraindicated in the presence of active acute glomerulonephritis, and it has been further shown by many investigators that certain patients may continue to exhibit signs of activity for many months; namely, hematuria. Such patients are said to have latent glomerulonephritis, and even though they have chronic tonsillitis I

wonder if Dr. Hull would advise tonsillectomy while they still had a significant microscopic hematuria, since such a procedure might be associated with the possibility of reactivating the disease.

Dr. Hull brought out the relationship of congestive heart failure to edema formation in acute glomerulonephritis, and I would like to ask him if he has ever found digitalis helpful in treating congestive heart failure associated with acute glomerulonephritis.

Dr. Edgar Hull (In closing): So far as I know, there is no statistical evidence of the value of tonsillectomy in cases of glomerulonephritis. However, in view of the close association between streptococcal infections of the throat and glomerulonephritis, it seems reasonable to advise tonsillectomy provided evidence of activity persists after an acute attack. It hardly seems necessary to perform tonsillectomy if all evidences of nephritis disappear within a month or two after an acute attack. The danger of acute flare-up might be minimized if tonsillectomy is preceded and followed by the administration of sulfanilamide. Certainly tonsillectomy should not be performed during an actual attack of acute nephritis.

My impression regarding the effect of digitalis in heart failure due to acute nephritis is that its effect is not as dramatic as that in heart failure due to chronic disease of the heart. I advise its use, nevertheless.

NON-PANCREATIC GLYCOSURA*

JERRY B. GWIN, M. D.

ADA, OKLA.

INTRODUCTION

Glucose is one of the high threshold substances, being reabsorbed from the proximal portion of the convoluted tubules of the kidneys in relatively large amounts. Ordinarily, glucose does not appear in the urine, or only in microscopic amounts, but when the renal threshold of this substance is exceeded in the bloodstream it begins to "spill over" into the urine.

There are conceivably two factors which may be responsible for glycosuria: (1) lowering of the normal renal threshold, or (2) elevation of the blood sugar level above the normal renal threshold.

The most common condition responsible for glycosuria is diabetes mellitus resulting from hypofunctioning pancreatic islet tissue. However, not infrequently, glycosuria

*Prize thesis submitted to the Department of Medicine of Tulane University.

is encountered in which the pancreas is not primarily at fault. The accurate diagnosis and differentiation of these conditions from diabetes mellitus is essential from the standpoint of treatment and prognosis. As will be brought out later, many of these patients enjoy normal health without following corrective measures, while in others the administration of insulin is actually dangerous.

The purpose of this paper is to present some of the common conditions in which glycosuria is frequently found without primary involvement of the pancreas. The scope of this discussion does not permit an exhaustive presentation of the theoretical and experimental data pertaining to the basis of all non-pancreatic glycosurias, but rather to mention some of the important work and accepted mechanisms explaining the appearance of gross sugar in the urine.

INCIDENCE

In a series of 14,000 cases of glycosuria reported by Marble, Joslin, Dublin and Marks,¹ 2,065 (14.8 per cent) were of other than pancreatic origin. Of this number they were able to trace 1,946 cases. In regard to sex, slightly more males (58.7 per cent) were involved than females (41.3 per cent).

CLASSIFICATION

In order to discuss the various causes of glycosuria some effort should be made toward a classification. That of Joslin et al.² is the simplest and most adequate I have been able to find and will be followed in this paper:

Glycosuria

- I. Diabetes mellitus.
- II. Potential diabetes.
- III. Renal glycosuria.
 - A. Glycosuria of pregnancy.
- IV. Unclassified glycosuria.
 - A. Glycosuria accompanying activity of glands of internal secretion other than the pancreas.
 1. Hyperthyroidism.
 2. Hyperpituitarism.
 3. In conditions in which the

adrenal glands are stimulated.

- B. Glycosuria due to stimulation of the intracranial nerves and centers.
 1. *Piqure diabetique* of Claude Bernard.
 2. Brain tumors.
 3. Cerebral hemorrhage.
 4. Injuries of the skull.
- C. Alimentary glycosuria.
 1. Glycoresis.
 2. Alimentary glycosuria.
 3. Hunger glycosuria.
- D. Glycosuria accompanying infections and toxemias.
- E. Glycosuria in chronic and degenerative conditions.
 1. Vascular hypertension.
 2. Chronic nephritis and nephrosis.
 3. Chronic hepatic disease as cirrhosis of the liver.
 4. Malignant disease.
- F. Glycosuria due to chemical agents.
 1. Phloridzin.
 2. Poisoning as by uranium, curare, carbon monoxide, caffeine, diuretin, morphine, strychnine, chromic salts, bichloride of mercury, and chloroform.
 3. Anesthesia and asphyxia.
- G. Mellituria other than glycosuria.
 1. Pentosuria.
 2. Lactosuria.
 3. Galactosuria.
 4. Levulosuria.
 5. Sucrosuria.

DISCUSSION

I. Since this paper deals only with non-pancreatic glycosuria, diabetes mellitus will not be considered.

II. Potential Diabetes: The diagnosis of potential diabetes is made by Joslin² in those individuals with glycosuria closely related to diet who become sugar-free with close restrictions, and whose blood sugar is

below 0.13 per cent fasting and never reaches 0.17 per cent after a meal.

Of the 1,946 cases of non-pancreatic glycosuria followed by Marble,¹ 193 (9.9 per cent of the total) developed true diabetes. According to the findings of these authors, the factors that seemed to favor the development of diabetes in those individuals were, in order of frequency, advancing age, overweight, blood sugar value above the average normal at the first observation (though below a definitely diabetic level), and in the younger patients a family history of diabetes. The subsequent incidence of diabetes was much greater among Jews, and was found particularly high among females.

Of 310 deaths occurring in this series, 262 were patients whose glycosuria remained benign. There was no death from diabetic coma.

Short³ reported a group of 171 cases of non-pancreatic glycosuria which he examined five years after the diagnosis was made. Of these, 90 per cent were males and 10 per cent females. At the end of five years 74 per cent (127 cases) were sugar-free, 26 per cent still had glycosuria, but none had developed diabetes.

III. Renal Glycosuria: The diagnosis of renal glycosuria in a large majority of cases reported in the literature is made in accordance with the following criteria formulated by Joslin²: "Conditions in which the renal threshold is very low, as indicated by the fact that all specimens of urine examined, including those after an overnight fast, contain sugar." He further states that the condition differs from true diabetes in that glycosuria is always present, blood sugar is normal, insulin has little or no effect on the urinary output of sugar, the rate of utilization of carbohydrate is normal, ketosis develops during starvation rather than following dietary excesses, diabetic symptoms, including polyuria, are absent and the condition, without treatment, is not progressive.

In experiments to determine the average renal threshold of normal persons, Camp-

bell, Osgood and Haskins⁴ found a great variation in the levels at which glucose began to be excreted in the urine. The range in the 24 subjects studied was from 99 to 228 mg. per cent. In 80 per cent of the cases the renal threshold was 140 to 190 mg. per cent. From this work it is seen that if a normal value is given it must allow for wide variation.

Thomas and Southworth⁵ call attention to the importance of water balance as a factor influencing the amount of sugar that appears in the urine in any 24 hour period. On the other hand, their work shows that alterations in the water balance have no effect on the total amount of sugar excreted over a long period of time. Sudden increase in fluid intake has been shown to "wash out" large amounts of sugar and during periods of starvation, as after surgical operations, this leads to acidosis.

Closely related to this is the glycosuria occurring following glucose infusions, though it may also be considered a type of alimentary or "starvation" glycosuria.⁶ This will be considered in more detail under alimentary glycosuria.

ETIOLOGY

From an etiologic point of view, renal glycosuria is thought to result from a lowering of the renal threshold so that it is reached before all the glucose is reabsorbed from the glomerular filtrate in the proximal convoluted tubules.⁷ There has been some question as to whether or not this is due to renal damage. The recent work of Friedman, Selzer, Sugarman and Sokolow⁸ yielded valuable data in answer to this question. These investigators carried out experiments on renal blood flow, glomerular filtration rate and degree of tubular reabsorption in normal and glycosuric subjects, which showed that the glomerular filtration rate and renal blood flow are normal in glycosuric individuals. They also showed that, while the degree of tubular reabsorption is somewhat decreased when the plasma level is between 100 and 200 mg. per cent, the efficiency of tubular reabsorption is equal to or exceeds that of

nonglycosuric individuals when the plasma level is above 200 mg. per cent. These findings show conclusively that renal glycosuria is not due to any organic kidney defect, but rather is due to some mechanism of lowered tubular reabsorption at average blood sugar levels.

HEREDITY

Babson⁷ reported investigations of an American family in which renal glycosuria was transmitted through three generations as a dominant character. Similar familial cases are mentioned by Joslin.² Babson believed that the presence of renal glycosuria in a given family increased the chances of superimposed diabetes, both in the members with renal glycosuria and those without it.

SYMPTOMS

According to MacPherson,⁹ symptoms of hypoglycemia occur in some cases of renal glycosuria and may be of two types: (1) minor feelings of faintness and weakness, due to a low fasting blood-sugar level, or (2) more severe attacks due to hyperinsulinism following rapid loss of sugar in the urine.

He described a case in which the severe attacks were caused by a poor appetite, hard work, and long intervals between meals. In the absence of these factors the symptoms disappeared.

TREATMENT

A large number of patients with renal glycosuria are perfectly comfortable without any particular treatment. However, it is wise for these individuals to avoid sugar, pastry, and dietary excesses and to maintain themselves on a wholesome, well-balanced diet. Their urine should be examined and the blood-sugar level determined one hour after meals at intervals of three to six months.²

A. Glycosuria of Pregnancy: Richardson and Ritter¹⁰ reported 247 consecutive cases of women who presented themselves for prenatal care in whom a glucose tolerance test was run. Of these, 20 per cent showed gross sugar in the urine following the administration of 1.75 gm. of glucose

per kilogram of body weight. Eight per cent showed a blood-sugar curve on which a diagnosis of lowered glucose tolerance would usually be made, but no definite variation was found in different periods of pregnancy.

In a review by Liston and Chisholm¹¹ it was concluded that 20 to 30 per cent of pregnant women on ordinary diet excreted sugar in the urine at some time during their pregnancy, more often in the latter half. They stated that this glycosuria is due to a lowered renal threshold to a great extent but that almost always it is associated with a diminishing power to assimilate carbohydrate and store it in the tissues as glycogen.

Allen,¹² in a study of 25 non-diabetic pregnant women, presented evidence suggestive of pituitary involvement as the basis of glycosuria occurring during pregnancy.

At the present time many questions remain unanswered as to the causes of glycosuria of pregnancy.¹¹

These patients should practice the same precautionary measures given for renal glycosuria with careful blood-sugar and urine determinations at fairly frequent intervals.

IV. Unclassified Glycosuria.

A. Glycosuria accompanying activity of the glands of internal secretion other than the pancreas.

1. Hyperthyroidism: In a large series of cases of hyperthyroidism studied by Joslin and Lahey,¹³ glycosuria was found in 38.6 per cent of primary and in 27.7 per cent of secondary hyperactivity of the gland. They cited work which showed that hyperactivity of the thyroid or administration of thyroid extract increased the sensitivity of the liver for the discharge of its glycogen, as a result of some stimulation which favors the conversion of glycogen into sugar. It was found that the thyroid and pancreas are definitely antagonistic in their action as regards carbohydrate metabolism and thyroid decreases the efficiency of insulin. They also showed that the action of the thyroid was more powerful than

that of insulin so long as there was an available supply of liver glycogen. However, when the stores of glycogen in the liver are depleted the organism becomes more sensitive to administration of insulin, even if administered with thyroid substance.

Wilder¹⁴ summarizes the action of the thyroid as follows: The carbohydrate metabolism is influenced in two ways: (1) By an andrenergic-like action which interferes with the storage of glycogen or releases glycogen previously stored by the liver; and (2) by an antagonism to the action of insulin. He states that insulin secretion is not suppressed in hyperthyroidism but even in the presence of adequate supplies, stabilization of hepatic glycogen is impossible in the face of the hyperirritable sympathetic nervous system.

2. Hyperpituitarism: In a review of the literature to 1927, Colwell¹⁵ cites a number of reported series of acromegaly and pituitary tumors in which glycosuria was a prominent finding. From his discussion it is evident that a great deal of confusion existed and little was known concerning the role of the hypophysis in carbohydrate metabolism.

In a study of 20 cases of basophilic adenoma of pituitary by Long,¹⁶ 14 were found to have glycosuria. He explains the maintenance of normal metabolism as the result of an equilibrium between the liver-endocrine organs-tissues, all exerting their effect by the influence of each on the other. Thus, hyperactivity of the pituitary produces a rise in blood sugar only in the presence of the liver. He presents evidence suggesting a possible relationship between the glycosuria and hyperactivity of the adrenal cortex, resulting from increased function of the pituitary. He states, however, that adrenal cortical hyperplasia is not invariably present in these conditions so the direct association is not definitely established.

The work of Houssay¹⁷ has contributed greatly to the present knowledge of the role of the pituitary in carbohydrate metabolism. He arrived at the conclusion

that the posterior pituitary extract causes an elevation of blood sugar through its action on the liver with the participation of the normal adrenal secretion. It counteracts the toxic and hypoglycemic action of insulin.

According to Houssay, the anterior pituitary extract possesses three actions: (1) Through its pancreatotrophic action it increases the secretion of insulin and produces a hypoglycemia; (2) its sympathico-adrenal produces an immediate and transient hyperglycemia; and (3) its glycogenolytic action decreases the liver glycogen.

Best and Taylor¹⁸ state that the diabetogenic substance or substances of the anterior pituitary act in a large part by stimulating gluconeogenesis in the liver. There is also evidence that insulin secretion may be diminished by its injection.

It can only be said that the action of the pituitary gland in carbohydrate metabolism is a very complex one and its role at the present time is still not clearly understood.

3. Conditions in which the adrenal gland is stimulated: It is well-known that fear, emotional upsets, anxiety, and excitement reflexly produce increased secretion of adrenalin.

Green and Emery¹⁹ examined 244 urine specimens of medical and dental students following a final examination in physiology and found gross sugar in the urine in 9.4 per cent. Similar findings have been reported by other authors,^{2, 14}

The adrenals play an important role in carbohydrate metabolism. Their action is clearly summarized by Best and Taylor.¹⁸ The secretion of the medulla causes an immediate rise in the blood sugar by the breakdown of liver glycogen to glucose. It also mobilizes muscle glycogen but the immediate product in this instance is lactic acid. However, part of the lactic acid is carried by the blood to the liver where it is reconverted to glycogen, which in turn furnishes the blood with glucose. Thus, epinephrine, while not a chemical antagonist to insulin, has an opposing physiologic action.

The action of the adrenal cortical hormone in this regard is not entirely known, but it has been shown to promote storage of liver glycogen. As mentioned before, the similarity in the actions of the adrenal cortical hormone and the anterior pituitary extract suggests that the effects of cortin are related to the adrenotropic effects of the anterior pituitary.

B. Glycosuria Due to Stimulation of the Intracranial Nerves: For some time it has been noticed that glycosuria occurs in cases of cerebral hemorrhage and thrombosis.

Blake²⁰ reports a series of 70 cases of coronary occlusion in 20 per cent of which there was a transitory glycosuria and hyperglycemia. He stresses the importance of making an accurate diagnosis because of the danger of administration of insulin to these patients. In all the cases studied the blood sugar had returned to normal with the disappearance of urinary sugar by the end of convalescence.

Raab and Rabinowitz²¹ reported that 71 per cent of 21 patients studied with coronary thrombosis showed abnormal sugar tolerance curves. Twelve patients investigated within two weeks of their closure all showed abnormal glucose tolerance. These authors believe that the important factor producing these findings is disturbance of the centers in the brain, due to edema resulting from the coronary occlusion. They state that experiments performed on dogs, ligating the coronaries, have resulted in edema of the medulla and pons with the subsequent production of hyperglycemia and glycosuria.

According to Munch-Peterson²² there are centers for sugar regulation in the hypothalamus, medulla, corpus striatum and cerebellum, which, when disturbed by injury cause a hyperglycemia. He also expresses the opinion that some cases of glycosuria occurring in cerebral injury are due to diminished power of tubular reabsorption resulting from malfunction of the pituitary, since this organ is so closely related to certain portions of the brain. The possibilities of cerebral glycosuria are summarized by this author as follows: "(1)

Through a dysregulation in the rise of blood-sugar after the reception of carbohydrate, the result being an alimentary hyperglycemia, on account of which the renal threshold is exceeded; (2) the threshold falls, i. e., the reabsorption of sugar in the tubules is reduced. In either case the urine will contain sugar.

"There are three mechanisms through which glycosuria may result due to the last form: (a) Direct nervous influence upon the parenchyma of the kidneys; (b) indirect influence through the vasomotor nerves, probably through glomerular action; and (c) centrally regulated, hormonal influence upon the kidneys."

Sachs and MacDonald²³ believe that the glycosuria following injury at the base of the brain is due to disturbance of carbohydrate metabolism under the control of certain centers. They reported a series of experiments on dogs in which the pituitary had been removed and the hypothalamus injured which resulted in a hypoglycemia with no glycosuria. When the same procedure was repeated, leaving the hypophysis undisturbed, there was a decrease in the blood sugar level and glycosuria. Thus, it would appear that the regulation of sugar metabolism is through the pituitary which is influenced by the hypothalamus via nerve pathways.

C. Alimentary Glycosuria: The normal individual has a high tolerance for glucose and large amounts may be ingested without sugar appearing in the urine. The factors which determine the sugar tolerance are rapidity of absorption, extent of utilization and storage by the tissues, and the rate of discharge from the liver.¹⁸ When excessive amounts of carbohydrates are consumed in some cases, the renal threshold is rapidly exceeded and sugar appears in the urine until the blood level again drops to normal. This type of glycosuria is found only following heavy meals or ingestion of large amounts of carbohydrates and gradually disappears.

Occasionally, following glucose infusions, sugar may be found in the urine, even though the renal threshold may not be ex-

ceeded and in many cases not even approached. Cutting⁶ explains this on the basis of "hunger diabetes." Many instances are seen in surgical patients who have been in various degrees of starvation.

It has been found¹⁸ that utilization of carbohydrate is at a maximum in animals which have been fed diets rich in these substances. On the other hand, there is definite impairment of glucose utilization after periods of fasting. This suggests that insulin liberation is depressed in starvation. The glycosuria resulting from glucose infusion is due to administration at faster rates that can be utilized by the body.

D. Glycosuria Accompanying Infections and Toxemia: In a large group of patients with infectious diseases, Williams and Dick²⁴ showed that 41 per cent had glycosuria when given sufficient dextrose. This was accompanied by an elevated fasting blood-sugar level and by alterations in the glucose tolerance curves. The largest average amount of dextrose was excreted by the patients with influenza and miscellaneous acute infections.

They showed that administration of insulin improves the dextrose tolerance and suggested the cause of the hyperglycemia, diminished glucose tolerance and glycosuria was injury to the islet tissue of the pancreas by circulating toxins.

On the other hand, Joslin² states that insulin efficiency is definitely lowered in acute infections as shown by laboratory investigations

It is interesting to note that Strain²⁵ reports a case of staphylococcus and streptococcus septicemia in which a copper reducing substance was excreted by the kidney constantly during sulfathiazole therapy, although the blood sugar level was only 73 mg. per cent. This reducing reaction cleared up promptly upon cessation of the drugs. Strain suggested that sulfathiazole either lowered the renal threshold for sugar or some copper reducing substance was excreted under its administration.

E. Glycosuria in Chronic and Degenerative Conditions: In addition to the condi-

tions already discussed, glycosuria is often found in other chronic and degenerative diseases, such as nephritis, nephrosis, liver disease, hypertension, and malignancy.

In a study of 30 hypertensive, obese females, Musser and Wright²⁰ found a lowered glucose tolerance as shown by the tolerance curves. None of these patients had glycosuria before the sugar was administered but eight showed a mild glycosuria at the end of three hours. In a control group of nine obese females without hypertension, no abnormality in glucose tolerance was found. According to these authors, no definite cause for the production of any one finding in this syndrome can be set forth. They expressed the opinion that each of the three conditions intensified the other with a resultant vicious circle being established.

In pathologic processes of the kidneys the most likely cause for glycosuria is damage to the parenchyma, reducing reabsorption from the tubules.

If the liver is involved in the diseased condition the glycosuria probably is due to impairment of the normal processes of glycogenesis and glycogenolysis.

In hypertension, the urinary sugar may result from renal damage, over-stimulation of the sympathetic nervous system, or a combination of the two.

The finding of glycosuria in cancer has been such a prominent feature that extensive investigation^{27, 28} has been carried out to determine whether or not any particular type of tolerance curve was typical of this pathologic process, but the results were disappointing. It was found that various disease processes with diminished glucose tolerance, though definitely unrelated conditions, exhibited very similar curves.

F. Glycosuria Due to Chemical Agents: Glycosuria following poisoning with various chemical agents is frequently seen and great care should be taken to elicit such a history in all patients excreting sugar in the urine where another cause is not obvious.

The various substances producing sugar in the urine exert their action on certain

organs concerned in the metabolism of carbohydrates, which in turn results in the abnormal urinary finding.²

Thus caffeine, diuretin, morphine, strychnine and chloroform cause glycosuria by stimulating the central nervous system; while curare, carbon monoxide and heavy metals act peripherally, probably on the liver cells.

Goettsch and Mason²⁹ reported a case of lead poisoning in which there was a consistent glycosuria without relation to meals and with a normal or depressed blood-sugar level. They expressed the view that the findings in this case were suggestive of kidney damage and that the condition should be classified as renal glycosuria.

The glycosuria occurring in ether, chloroform or nitrous oxide and oxygen anesthesia, according to Joslin, results from acidosis produced by the anesthetic.

G. Mellituria Other than Glycosuria: The various other causes of mellituria are not to be discussed in this paper, aside from pointing out that it is important to determine the type of reducing sugar present in the urine.

SUMMARY

Various conditions in which non-pancreatic glycosuria is frequently encountered are discussed, chiefly from the standpoint of production of sugar in the urine.

Hypofunction of the islet tissue of the pancreas is at fault in the large majority of cases of glycosuria but 15 per cent of such instances are due to extra-pancreatic conditions.

There is a complex state of equilibrium involving many factors which control carbohydrate metabolism. A number of physiologic processes are normally brought into play to promote economic "utilization" of glucose, which consists of oxidation by the tissues and storage in an easily available form.

The renal threshold acts as a stabilizing factor to maintain a fairly constant blood level of glucose for immediate oxidation by the tissues as required. In certain conditions such as endocrine disorders, stimula-

tion of intracranial centers, infections, chronic and degenerative diseases or the action of various chemical agents, the balance is upset. When this occurs glycosuria results from one of two causes: (1) Lowering of the renal threshold, or (2) a marked rise in the blood-sugar level above the normal renal threshold.

CONCLUSIONS

1. About 15 per cent of cases of glycosuria are non-pancreatic in origin.
2. An accurate diagnosis of non-pancreatic glycosuria is essential from the standpoint of treatment and prognosis.
3. Subsequent development of true diabetes mellitus is uncommon in non-pancreatic glycosuric individuals.
4. Renal glycosuria is due to diminished power of reabsorption of glucose from the proximal convoluted tubules at normal plasma levels, but is not due to any organic renal defect.
5. The basic cause of the various "unclassified glycosurias" is very complex. Although many advances have been made with reasonable explanations in some of the conditions, many questions remain unanswered at the present time.

REFERENCES

1. Marble, A., Joslin, E. P., Dublin, L. I., and Marks, H. H.: Non-diabetic glycosuria, *Am. J. Med. Sci.*, 197:533, 1939.
2. Joslin, E. P., Root, H. F., White, P., and Marble, A.: *The Treatment of Diabetes Mellitus*, Lea and Febiger, Philadelphia, 1940.
3. Short, J. J.: Non-diabetic glycosuria cases after 5 years, *Proc. Life Ext. Exam.*, 2:90, 1940.
4. Campbell, R. A., Osgood, E. E., and Haskins, H. D.: Normal renal threshold for dextrose, *Arch. Int. Med.*, 50:952, 1932.
5. Thomas, H. M., and Southworth, H.: The renal threshold for glucose; clinical observations on a case of non-diabetic glycosuria, *Ann. Int. Med.*, 12:1560, 1939.
6. Cutting, R. A.: Unexpected occurrence of sugar in the urine following glucose infusions, *Am. J. Surg.*, 50:306, 1940.
7. Babson, S. G.: Renal glycosuria, a hereditary and clinical study of one family, *J. Pediat.*, 17:781, 1940.
8. Friedman, M., Selzer, A., Sugarmann, J., and Sokolow, M.: The renal blood flow, glomerular filtration rate and degree of tubular reabsorption of glucose in renal glycosuria, *Am. J. Med. Sci.*, 204:22, 1942.
9. MacPherson, I.: Renal glycosuria with hypoglycemia, *Lancet*, 2:338, 1941.
10. Richardson, R., and Ritter, R. S.: Glycosuria in pregnancy, *Am. J. Obstet. & Gynec.*, 24:362, 1939.
11. Liston, W. G., and Chisholm, F. B.: Glycosuria in pregnancy as a predisposing cause of vaginal thrush, *Edinburgh Med. J.*, 48:433, 1941.

12. Allen, E.: The glycosurias of pregnancy, *Am. J. Obstet. & Gynec.*, 38:982, 1939.
13. Joslin, E. P., and Lahey, F. H.: Diabetes and hyperthyroidism, *Am. J. Med. Sci.*, 176:1, 1928.
14. Wilder, R. M.: *Clinical Diabetes Mellitus and Hyperinsulinism*, W. B. Saunders Co., Philadelphia, 1940.
15. Colwell, A. R.: The relation of the hypophysis to diabetes mellitus, *Medicine*, 6:1, 1927.
16. Long, C. N. H.: Disturbances of the endocrine balance and their relation to diseases of metabolism, *Ann. Int. Med.*, 9:1619, 1936.
17. Houssay, B. A.: Carbohydrate metabolism, *New England J. M.*, 214:971, 1936.
18. Best, C. H., and Taylor, N. B.: *The Physiological Basis of Medical Practice*, Williams and Wilkins Co., Baltimore, 1939.
19. Green, E., and Emery, F. C.: Emotional glycosuria in medical and dental students, *Endocrinology*, 30:353, 1942.
20. Blake, K. W.: Transitory glycosuria and hyperglycemia in acute coronary occlusion, *J. A. M. A.*, 108:443, 1937.
21. Raab, A. P., and Rabinowitz, M. A.: Glycosuria and hyperglycemia in coronary thrombosis, *J. A. M. A.*, 106:1705, 1936.
22. Muncb-Peterson, C. J.: Glycosurias of cerebral origin, *Brain*, 54:72, 1931.
23. Sachs, E., and MacDonald, M. E.: Blood-sugar studies in experimental pituitary and hypothalamic lesions, *Arch. Neurol. & Psychiat.*, 13:335, 1925.
24. Williams, J. L., and Dick, G. F.: Decreased dextrose tolerance in acute infectious diseases, *Arch. Int. Med.*, 50:801, 1932.
25. Strain, R. E.: Reduction of Benedict's solution by urine during a course of sulfatiazole therapy, *The Indian Med. Gaz.*, 76:206, 1941.
26. Musser, J. H., and Wright, D. O.: Hypertension, obesity, and hyperglycemia, *J. A. M. A.*, 101:420, 1933.
27. Rohdenburg, G. L., Bernhard, A., and Krehbiel, O.: A study of sugar mobilization based upon 228 human cases, *Am. J. Med. Sci.*, 159:577, 1922.
28. Jackson, D.: Carbohydrate metabolism in cancer, *Texas St. Med. J.*, 24:622, 1929.
29. Goettsch, E., and Mason, H. H.: Glycosuria in lead poisoning, *Am. J. Dis. Child.*, 59:119, 1940.

NEW ORLEANS Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society
under the jurisdiction of the following named
Journal Committee:

C. C. deGravelles, M. D., Ex officio

For three years: Leon J. Menville, M. D., Chairman

G. C. Anderson, M. D.

For two years: James K. Howles, M. D.

For one year: Lucien A. LeDoux, M. D.,

Vice-Chairman

H. W. Kostmayer, M. D.,

Secretary

EDITORIAL STAFF

John H. Musser, M. D.....*Editor-in-Chief*

Willard R. Wirth, M. D.....*Editor*

Daniel J. Murphy, M. D.....*Associate Editor*

COLLABORATORS—COUNCILORS

H. E. Bernadas, M. D.

J. T. O'Ferrall

Guy R. Jones, M. D.

T. B. Tooke, Sr., M. D.

George Wright, M. D.

Rhett McMahon, M. D.'

C. A. Martin, M. D.

W. F. Couvillion, M. D.

Paul T. Talbot, M. D.....*General Manager*

1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

THE AMERICAN MEDICAL ASSOCIATION

One never comes away from the meetings of the House of Delegates of the American Medical Association without a feeling of admiration for the work that is done by the delegates at this, their annual business session. These men are most attentive at meetings; a group of them are appointed to reference committees, which committees often have a tremendous amount of work to accomplish before they can report back to

the House of Delegates. One has the firm conviction that this House of Delegates is composed of as fine a group of high principled, intelligent men as could be gotten together anywhere in the United States or, in modern phraseology, on this globe.

The meeting this year of the House of Delegates was characterized by a unity of feeling that we are living in serious times, that our profession need be on its guard to obviate disruption of medical practice as now carried out, in view of the possibilities of what might happen after the war is over. The House took cognizance of changing times and changing customs. To meet intelligently and to be prepared to forestall revolutionary changes in medical practice, a new Council was created which should be a very important accretion to the Councils already formed by the House of Delegates and by the Trustees. This new Council will deal with problems that have more to do with the economic and social sides of our profession than the American Medical Association has seen fit, through its officers and delegates, to deal with in the past. The American Medical Association has always been a scientific organization and has been so classified by the Department of Internal Revenue, but nevertheless science can only function satisfactorily when there is a firm and substantial pedestal of security, with economic and intellectual independence. To obtain these is part of the function of organized medicine.

The House of Delegates of the American Medical Association, as president elect, selected for the coming year Dr. H. L. Kretschmer who, for some ten years, has been treasurer of the American Medical Association and who has given much time to its financial problems. The notice of the election of this officer and other officers will have appeared in the Journal of the American Medical Association before the appearance of these editorial comments. The House of Delegates has made a wise selection of an able physician to head the American Medical Association. The same may be said of the other recently elected officers.

The Distinguished Service Award was conferred on Dr. Elliott P. Joslin of Boston. The selection of this outstanding physician reflects the sentiment of the House that the award should go to men in the profession who have been real leaders. This award has only been given a very few years. It will be remembered that Dr. Matas was the first recipient of the Distinguished Service Medal.

The two representatives of the Louisiana State Medical Society were active at all times in the performance of their duties as delegates. Dr. Leon Menville served on the reference committee on Medical Education and Hospitals. It should be pointed out that it is to the reference committees, thirteen in number, to whom the reports and motions are referred for their approval or disapproval. These committees play an extremely important part in the business of the House. The ultimate and final action of the House is usually based upon the report of the references committees when this report is presented at a succeeding session of the House.

WAR TIME GRADUATE MEDICAL MEETINGS

Under the auspices of the American Medical Association, the American College of Physicians and the American College of Surgeons and authorized by the Surgeons General of the Army, Navy and Public Health Service, a committee has been set up to provide for an educational program which would benefit the doctors in the armed services, as well as civilian doctors. This proposed program is an elaboration of the teaching plan started by the American College of Physicians and carried out most successfully in the Boston, Chicago and Philadelphia areas. As result of the success of this meeting, innumerable requests have been made to place a similar type of program in the large Army and Navy hospitals throughout the country.

It is realized and appreciated that the medical man working in a hospital has continuous contact with patients and is able to continue with his medical or surgical work.

As a matter of fact the men in big station and general hospitals have had unexcelled opportunity of practicing medicine at its best. Surrounded by splendid representatives of the medical profession of this country, they have all the latest and most modern equipment as well as access to, unfortunately limited, library facilities. The medical officers who are with combat organizations do not have, except to a very minor degree, very much strictly professional work to carry out. If a man is taken sick in the field or in the camp he is at once transferred to a hospital. These officers have always before them the fear that they will become stale and will not be able to keep up with medical progress.

While the medical meetings will be held in big hospitals they should be primarily for the men in the field. They may be of benefit also to the civilian doctors who live or reside near the various governmental medical installations scattered all over the United States.

Organization of the committee which will function as the guiding spirit of numerous subcommittees in different geographical areas of the country, has progressed rapidly. In some areas already these war time graduate medical meetings have been arranged for or have been conducted. In a general way they call for six hours of ward walks, clinics, demonstrations and conferences. These will be held in the afternoon and evening so they will not interfere with the daytime activities, except to a slight degree, of the medical officers.

The scope of the teaching schedule can vary considerably. In some areas it may be possible to have only a one day conference with two qualified lecturers from civilian life. Comprehensive plans include the formation of a schedule with a large group of teams representing different medical specialties to hold five or six consecutive day meetings. Possibly these meetings would be held in only one hospital but if there are nearby hospitals, in those that are available.

Altogether the plan for the war time graduate medical meetings seems to be a splendid concept. It will bring to medical

officers in the field qualified teachers who will present to the men what they are doing in the way of practice; it will give the field, hospital and civilian doctors new ideas, new thoughts and a refreshing of general medical knowledge.

—o—

CONTROL OF AIR-BORNE INFECTION

Robertson* writes to the effect that the medical profession is becoming more and more aware of the importance of the role played by air in transmitting respiratory diseases. The profession has very generally believed that physical agents such as the sun, heat and drying are most effective in destroying micro-organisms. For the last few years much evidence has been brought forth to show that bacteria are widely distributed in the air. They have been recovered from the stratosphere and from freshly fallen snow in the polar regions. Certain plant diseases have been transmitted a distance of a thousand miles in forty-eight hours. While it is true that air-borne infection in the open spaces is probably of minor importance in the pathogenesis of disease in man, within enclosed areas on the other hand it is probable that the great number of respiratory tract infections originate. A striking example of this statement, in the last war these particular diseases accounted for 80 per cent of the deaths due to disease and not to battle casualties. In the present war the country has been singularly fortunate in the few deaths that have occurred from respiratory tract infections. On the other hand, half of the patients admitted to general and camp hospitals have entered these institutions because of some acute infection of the upper, and often lower, respiratory tract.

Because of the now well appreciated fact that close contact with their fellowmen may produce and bring about respiratory tract infection, in the last few years many studies have been undertaken which have to do with the control of these air-borne infections. The simplest preventive measure is

the isolation of the sick man and the masking of those who come in contact with him, but unfortunately the most virulent organisms may be found in the respiratory tract just prior to the onset of clinical symptoms. The problem is to devise ways and means of sterilizing the air in schools, movies, churches and other places where people congregate in close quarters and in relatively small places. Ultraviolet radiation has been employed by certain investigators with apparently excellent results. The use of the ultraviolet radiation for air sterilization is, however, limited because the persons in irradiated rooms have to be shielded from the direct light so that only the upper air in the rooms can be sterilized.

Chemical air sterilization is a method that originated with Lister when he used carbolic acid sprays in the immediate vicinity of his operative field. Within the last few years dispersed germicidal mists have been employed in certain institutions under investigative conditions. The ideal agent for this purpose has not been as yet discovered. The air sterilizing material must be non-toxic, odorless, tasteless and non-irritating but one which is still able to kill bacteria suspended in the air. Certain chemical preparations have proved reasonably effective but the problem is still unanswered and unsolved concerning the best way of dispersing the agent in the air so that it can be evenly distributed throughout. A difficulty arises also from the problem of determining the concentration that is required under certain ventilating conditions. Lastly, these potent vapors might possibly have a toxic effect on an individual if contact was maintained with them for too long a period of time. A few hours' contact does not occasion any reaction but repeated and long continued contact might possibly bring about certain toxic effects as for example with propylene glycol vapor which is the particular substance that Robertson has been employing.

A large and broad field in preventive medicine has been opened by Robertson and other investigators. It is quite possible, with air conditioning, with saturation of

*Robertson, O. H.: Air-borne infection, Science, 97:495, 1943

the air with germicidal agents, that the problems of winter colds and coughs, pneumonias and influenza may be ultimately solved.

THE ORGANIZATION SECTION

Under the above caption a new section will be added to the New Orleans Medical and Surgical Journal. This section will have to do with the policies and future plans of the State Medical Society particularly, as well as the broad policies of organized medicine as a whole. The contributors to this section will be the president, the secretary-treasurer and from time to time it is hoped as well that the councilors will present their points of view in regard to the broad aspects of medicine from the organization standpoint. This section will be informative in that it will dilate upon the

policies of the organization in the intervals between the meetings of the House of Delegates. In the present day period of unrest and general disturbances it will devolve upon the Council to make immediate decisions about matters which cannot be delayed until the House of Delegates meets.

The section will be informative also in that there will be discussed here the economic and social problems which are confronting the medical profession every day and in ever increasing numbers. It is hoped that the readers of the Journal will peruse this page regularly in order to keep abreast of the whys and wherefores of actions taken by the House of Delegates at the recent meeting, in order to be informed of latest developments in economic medicine and in order to have knowledge of what the officers in the Society are doing for their members.

ORGANIZATION SECTION

The Executive Committee wishes to dedicate this page to the members of our profession, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society. An informed profession should be a wise one.

WHY INCREASE STATE DUES?

Unquestionably why the need for an increase in the State Society dues is being asked by many of our members. A few relevant facts may help to clarify any confusion.

The medical profession of this state and nation is now facing the greatest test of the present time involving the basic principles of organized medicine. Never will physicians be called upon for such momentous decisions which may reflect the destiny of our American way of life, principles for which we are now fighting and hope to retain. Up to November, 1942 there were some 400 members of the Louisiana State Medical Society called into military service. We, who are at home, have a definite and spe-

cific obligation to preserve during their absence, the practice of medicine on a high plane, so that when they return to civilian practice ample opportunities will be available for the rightful restoration of their practice. So as a patriotic gesture the House of Delegates voted to delete the 1943 dues of every physician in military service who was a member of the Society in 1942. This is a privilege which all of our civilian doctors should recognize as an opportunity to maintain the status of the medical profession while our confreres are fighting for our preservation at the front.

In keeping with the demands of the time, it was also thought expedient to establish a circulating library for the entire state. An energetic committee is now at work with the hope of very shortly developing suitable plans for its perfection.

Another matter for your consideration is that we doctors are being brought very seriously face to face with legislative problems affecting the practice of medicine nationally and locally. The condition is acute and demands immediate activity. To forestall any

radical processing of medicine will require the most careful and attentive watchfulness in the national capital by groups, qualified and dependable, to prevent such alterations. That this is probably a most serious condition no one well informed can deny.

These are a few of the problems which your House of Delegates is trying to solve for your protection. They may become more intense on the slightest provocation. To safeguard and protect these sacred obligations takes money, more money than could be realized from even a substantial increase of dues. If organized medicine is successful in combatting ill-advised projects, no one will feel the worse for the increase. The most critical can not deny the sincerity and unanimity of the House of Delegates in its attempt to meet the far reaching problems for the benefit of the profession.

EXCERPT FROM PRESIDENT IRWIN'S ADDRESS TO HOUSE OF DELEGATES

"It is my belief that, on the whole, doctors are called upon to contribute less to the financial support of their organization than any other similar group of individuals. Only sufficient money is contributed to offset expense of operation and the publication of a scientific magazine. I say to you, the time has come when the horizon of operation must be widened; other fields must be entered for our preservation as a self-con-

trolled and guided profession. To accomplish this, we must be no longer complacent, we must be active, money must be had and interest in the profession must be fired to a newer heat. There is no goal too high for accomplishment if the doctors will become determined. They can do it, they must do it, and they will do it. Our organization is pitifully poor, financially; unable to carry on a campaign against the most insignificant foe. Its financial position must be improved. The time for a simple altruistic organization has passed, the economic existence of every member must be preserved and maintained or improved. Other groups have grown into powerful groups, but not without money. We must become stronger or perish. It is my belief that every physician should contribute annually to the support of his profession the sum of one hundred dollars; \$25.00 to his local society, \$25.00 to the national society, and \$50.00 to his state society. The greater portion should go to the state organization because it is the unit of operation. It has been my observation that one is only interested genuinely in that into which he has invested and to the degree of his investment. This amount of money will make an organization secure, powerful and will insure its continuance. This expenditure by each member will be returned many fold in benefits gained. I do hereby advocate and urge approval of the House of Delegates of this financial suggestion."

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR OF MEETINGS

- | | | | |
|---------|--|---------|---|
| July 1 | Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m. | July 14 | Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m. |
| | Executive Committee, Baptist Hospital, 8 p. m. | July 15 | Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m. |
| July 5 | Board of Directors, Orleans Parish Medical Society, 8 p. m. | July 19 | Clinico-pathologic Conference, Baptist Hospital, 8 p. m. |
| July 6 | Eye, Ear, Nose and Throat Staff, 8 p. m. | July 21 | Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m. |
| July 7 | Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m. | | Clinico-pathologic Conference, Hotel Dieu, 8:15 p. m. |
| July 8 | New Orleans Hospital Council. | July 22 | Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:14 p. m. |
| July 12 | Joint Scientific and Second Quarterly Executive Meeting, Orleans Parish Medical Society, 8 p. m. | | |

DePaul Sanitarium Staff, 8 p. m.

July 28 Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.

July 29 Clinico-pathologic Conference, Touro Infirmary, 11:14 a. m. to 12:15 p. m.

July 30 L. S. U. Faculty Club, 8 p. m.

During the month of June the Society held one regular meeting. The program was as follows: Symposium on Uses of Sulfonamides:

Sulfonamides in Internal Medicine, by Dr. C. J. Tripoli.

The Use of Sulfonamides in Surgery, by Dr. Isidore Cohn.

Sulfonamides in Urology, by Dr. W. A. Reed.

Sulfonamides in Gynecology and Obstetrics, by Dr. Curtis Tyrone.

Sulfonamides in Dermatology, by Dr. James K. Howles.

Sulfonamides in Otolaryngology, by Dr. Wm. A. Wagner.

Dr. Jacob Barnett and Dr. J. A. Danna attended the annual reunion of the "Class of 1893 of old Boys' High school," held June 13.

Dr. Guy A. Caldwell was recently appointed chairman of the health division of the Council of Social Agencies.

At a meeting of the Eighth District Medical Society in Alexandria held June 7, Drs. Edgar

Hull and J. D. Rives spoke on war gas casualties, and Dr. Eugene Countiss spoke on emergency medical service in Louisiana.

Drs. Herman B. Gessner and E. A. Jurgelwicz attended the recent annual meeting of the Tulane Alumni Fifty-Year Arts and Science Club.

At the annual meeting of the Louisiana Society for Crippled Children, recently held in New Orleans, Dr. F. L. Jaubert was re-elected president.

Dr. Ada S. Kiblinger, president of the New Orleans Quota Club, delivered the address of welcome at the opening of the seventh annual conference of the Quota Club International, recently held in New Orleans.

Dr. John H. Musser recently attended a meeting of the Council on Medical Education and Hospitals in Chicago. Dr. Musser also attended a meeting of the house of delegates of the American Medical Association and the three days of examinations of the American board of internal medicine.

Drs. W. R. Brewster and Sims I. Chapman were recently promoted from the rank of lieutenant commander to commander. Both are attached to the Eighth Naval District headquarters, New Orleans.

Mr. Alfred J. Kuhlmann, Executive Secretary, is being congratulated on the birth of a son, born June 19.

LOUISIANA STATE MEDICAL SOCIETY NEWS

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	

BI-PARISH MEDICAL SOCIETY

The Bi-Parish Medical Society met in Angola, as the guests of Dr. M. A. Walker and Staff. After a bounteous repast prepared by the officers and attendants of the Louisiana State Penitentiary, the following Scientific Program was presented:

Dr. J. D. Martin read an excellent and instructive paper on syphilis, stressing especially the infectious stages of this disease and treatment for same. This paper was favorably discussed by members present.

Dr. George Fasting, pathologist, Charity Hospital, New Orleans, gave us a very instructive and

helpful discussion relative to bacillary dysentery, stressing his epidermal method of treatment. This paper was also favorably discussed by those present.

Warden D. D. Bazer gave an interesting talk thanking the Society for meeting in the Institution; his address was appreciated by all present.

Father Marioneaux, Catholic Chaplain of the Louisiana State Penitentiary, gave an interesting discussion, stressing the point of the danger of the youth and the young people of our state and nation, relative to the moral aspect and the danger of the teen age especially with the Army of our nation,

and the responsibility to a great extent of the mothers and fathers of the commonwealth.

Dr. Martin also made a startling, nevertheless true assertion that the great percentage of acute infectious cases of syphilis was formerly prostitutes, but now about 80 per cent of the cases treated in the Health Unit are girls in the teen age. Therefore, it behooves us, the mothers and fathers of this nation, to take notice and throw every safeguard around the girls of our nation in our homes, that the virtue of womanhood may not deteriorate.

Drs. J. D. Martin, B. F. Smith and R. H. Hanson were elected members of our Society; Dr. George Fasting of New Orleans, was elected honorary member. A vote of thanks was extended to Drs. Martin and Fasting for their excellent papers. Also a vote of thanks was extended to Father Marioneaux for his timely talk before our Society.

The Society adjourned to meet the first Wednesday in September at 7:30 p. m. in the East Louisiana State Hospital.

Dr. M. A. Walker, President.
Dr. E. M. Toler, Sect. Treas.

COMMISSIONING CEREMONY

The United States Naval Hospital at New Orleans was officially commissioned with the hoisting of the colors on the morning of June 1. A very interesting ceremony took place at this time. The enlisted personnel, the nurses, and officers paraded before the Commanding Officer, Captain C. W. Ross, following which the Acting Commandant of the Eighth Naval District, Captain E. T. Oates, authorized the commissioning of the hospital. His remarks were followed by a short address by Captain Ross. Following this formal ceremony, luncheon was served at the exercises and the hospital was opened for inspection.

The hospital is beautifully organized, splendidly equipped, and situated on the Pontchartrain lake-front. At the present time it has accommodations for some 400 patients, but can be increased rapidly in size, if necessity arises, to an institution holding 1,500 to 2,000 patients.

The following doctors were among the other invited guests:

Comdr. W. P. Gardiner, Dr. George Taquino, Dr. Ashton Thomas, Dr. Kermit Brau, Dr. A. J. Hockett, Dr. Ernest Celli, Dr. John T. Crebbin, Dr. Frank Gomilla, Dr. J. A. Henderson, Dr. Val Fuchs, Dr. C. G. Cole, Dr. Roy B. Harrison, Dr. Isidore Cohn, Dr. H. Vernon Sims, Dr. Edgar Hull, Dr. John W. Atkinson, Dr. Paul Talbot, Dr. Rudolph Matas, Dr. Emmett Irwin, Dr. Urban Maes, Dr. John Musser, Dr. Marcus Magruder, Dr. O. P. Daly, Dr. David E. Brown, Dr. H. B. Alsobrook, Dr. E. H. Lawson, Colonel Sydney Smith, Dr. L. E. Hooper, Dr. Alton Ochsner, Dr. B. I. Burns, Dr. Hiram Kostmayer, Dr. Williams, Dr. John Whitney, Comdr. Roger Brewster.

NEWS ITEMS

Dr. James D. Rives, Clinical Professor of Surgery of the Louisiana State University School of Medicine, was elected to membership in the American Surgical Association last year. The only other New Orleans members are Dr. Rudolph Matas, Dr. Alton Ochsner, Dr. Mims Gage, and Dr. Urban Maes.

Major George Haik has been assigned by the Army to Harvard Medical School where he will take a special course in plastic surgery of the eye.

The American Congress of Physical Therapy will hold its twenty-second annual scientific and clinical session September 8-11, Palmer House, Chicago.

Applications for the 1944 examinations of the American Board of Obstetrics and Gynecology must be in the secretary's office, 1015 Highland Building, Pittsburgh, Pa., before November 15.

There will be no rationing of x-ray films. Private radiologists will enjoy the same rights as hospitals and clinics in obtaining films; no preferential treatment will be given to hospitals. There is an abundance of materials required in the manufacture of roentgen films. Productive facilities are taxed to the utmost. Although supplies will be reduced, there is no expectation of an acute shortage, according to special bulletin of the American College of Radiology.

Basil O'Connor, President of The National Foundation for Infantile Paralysis, announced today the addition of nine members to the Board of Trustees of that Foundation, making the total number of Trustees thirty-nine.

The medical advisory committee of The American Foundation for Tropical Medicine, Inc., authorized grants to six North American medical schools totalling \$26,100 during the first quarter of 1943, according to a report by Dr. J. A. Curran, executive director, at a meeting of directors of the Foundation in New York City on April 14.

SOUTHERN BAPTIST HOSPITAL

The regular monthly meeting of the Clinical Staff of the Southern Baptist Hospital was held on Tuesday, May 25 at 8 p. m. The following program was presented: Intravertebral Disc Lesion by Dr. Rufus Alldredge; Presentation of a Case by Dr. F. L. Ware.

The regular monthly staff meeting of the Southern Baptist Hospital was held Tuesday, June 22. The program consisted of a detailed report of Therapeutic Uses of Human Blood Plasma by Dr. J. W. Davenport, Jr.

The Southern Baptist Hospital, as has practically all hospitals, is suffering from shortage of professional technical help. It has been necessary for Dr. Magruder, Director of the Radiology Department, to limit the number of gastrointestinal series and barium enemas to be handled daily in the Department of Radiology.

OCHSNER CLINIC

The regular monthly meeting of the staff of the Ochsner Clinic was held on Friday, June 18. The program consisted of a paper by Dr. Harry D. Brown on Unilateral Renal Disease and Hypertension. Dr. Granville Bennet, recently selected as head of the Department of Pathology at Tulane, then presented a most interesting discussion with lantern slides, The Pathology of Rheumatoid Arthritis and Rheumatic Fever. The last formal presentation was a movie film shown by Dr. Lewis Golden, illustrating methods and results of electric shock therapy in certain mental conditions.

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

The Southern Section of this organization met at the Louisiana State University School of Medicine on Friday, June 25. The following program was presented: "Electrocardiographic Changes, the Ischemia-Injury Pattern, Produced in the Dog by Temporary Coronary Occlusion" by Robert H. Bayley, John S. LaDue, and Dorothy York; "A Study of the Sedimentation Rate of the Erythrocytes in Sickle Cell Anemia" by Travis Winsor and George E. Burch; "Certain Physico-chemical Characteristics of the Blood in Sickle Cell Anemia, Used as Objective Diagnostic Tests" by George E. Burch and Travis Winsor; "Occurrence of Nucleated Erythrocytes in Newly Born Infants of Rh-compatible Mothers" by Albert E. Casey and S. H. Crowson; "Plasma Protein Changes in Asphyxia" by D. Bailey Calvin; "Differentiation of Aerobic Spore-forming Bacilli by a New Sudan Black-B Fat Staining Procedure" by Kenneth L. Burdon and Carl Lamanna; "The Preparation and Testing of a Specific Antigen for Diagnosis of Human Strongyloidiasis" by Mary Jane Crump Brannon.

SOUTHERN MEDICAL ASSOCIATION

Dr. Lucien A. LeDoux, Chairman of the Council of the Southern Medical Association and of its Executive Committee, at a meeting held May 27 in the Roosevelt Hotel, announced that the next meeting of the Association will be held in Cincinnati, Ohio, November 16-18. The committee decided that war had not lessened the need for such a meeting, which will be equally divided between civilian and military medicine.

SCHENKEN ON CENSOR BOARD

Dr. J. R. Schenken, head of the Department of Pathology and Bacteriology of the Louisiana State

University, was recently elected a member of the Board of Censors of the American Society for Clinical Pathologists at the annual meeting of this organization in Chicago.

UNITED STATES PUBLIC HEALTH SERVICE

Surgeon David C. Elliott has been relieved from duty in New Orleans and sent to Savannah, Georgia. Past Asst. Surgeon Edgar M. Scott, Jr., has been relieved from duty in New Orleans and sent to Ketchikan, Alaska.

INFECTIOUS DISEASES IN LOUISIANA

For the week ending May 8 diseases reported to the State Board of Health in numbers greater than 10 include 106 cases of measles, 67 of German measles, 31 of pulmonary tuberculosis, 19 of chickenpox, and 10 of scarlet fever. This weekly report was the one that contained as well the monthly report of the venereal diseases. In the past month there have been 2,529 cases of syphilis, 1,157 of gonorrhea, and 125 of chancroid. During this period there were listed also among some other rarer diseases six cases of malaria, five of meningococcus meningitis, and two of undulant fever. There were listed 77 cases of unclassified pneumonia. For the week which closed May 15 there were reported 66 cases of mumps, 63 of measles, 24 of German measles, 18 of cancer, 17 each of chickenpox and pulmonary tuberculosis. There were two additional cases of malaria reported this week, three of meningococcus meningitis, as well as four of typhus fever. There were 47 cases of unclassified pneumonia. For the week which came to an end on May 22, 154 cases of pulmonary tuberculosis were reported. There were also 37 of measles, 18 of mumps, 13 of hookworm infestation, 12 of German measles, and 10 of chickenpox. There were also reported five cases of meningitis and 22 cases of unclassified pneumonia. For the week ending May 29 tuberculosis again led the list of reportable diseases with 130 entered in the records of the Department of Epidemiology of the State Department of Health. Other diseases greater than 10 in number include 19 incidences of hookworm infestation, 16 of measles, 14 of whooping cough, and 13 of mumps. There were no cases of malaria nor of meningitis reported this week. There was, however, a case of poliomyelitis in Calcasieu Parish. It is to be noted also that there were only eight instances of unclassified pneumonia. For the week coming to an end June 5 there were reported 147 cases of pulmonary tuberculosis, 27 of measles and 26 of mumps. The monthly venereal disease report came out this week. There were reported 1,514 cases of syphilis, 863 of gonorrhea, 134 of chancroid, and 16 of lymphopathia venereum. Four cases of typhus fever were reported this week, and a like number of meningococcus meningitis; also 31 cases of unclassified pneumonia.

OCD PLAN FOR EMERGENCY MEDICAL SERVICE IN INDUSTRIAL PLANTS

Every plant medical department should prepare a "disaster operations plan" to provide adequate medical service in case of a plant catastrophe involving large numbers of casualties. This is the advice presented in a new bulletin, "Emergency Medical Service for Industrial Plants," issued by the Medical Division of the Office of Civilian Defense.

The War and Navy Departments have urged that plants for which they are responsible plan to use the facilities and services of the Emergency Medical Service organized by Civilian Defense authorities. The Medical Division has in turn urged that local Chiefs of Emergency Medical Service assist plant medical departments by placing the community medical facilities at their disposal in the event of a major emergency, regardless of its cause.

Pointing out that plant medical departments are not ordinarily staffed or equipped to provide medical service for the large number of casualties which may occur in a major disaster, the bulletin outlines arrangements which should be made to assure adequate medical care at such times.

The disaster operations plan should provide for necessary first aid care at the site of the incident, for adequate ambulance service, and for hospitalization of the seriously injured, the bulletin advises.

Provision must first be made for Casualty Stations. Several sites should be selected, in order that alternative locations may be used in case those of first choice are destroyed or rendered unserviceable. An additional site outside the plant should be selected for use in the event of extensive damage to the plant, such as might occur in a bombing or explosion.

The importance of identification and record is especially emphasized in the bulletin.

MEDICAL SOCIETY FORMED TO EXCHANGE INFORMATION WITH SOVIET UNION

The American-Soviet Medical Society has been founded to meet an increasing demand for information about the results and achievements of Soviet medicine. Reports have reached this country of spectacular feats of surgery wrought by the Soviet medical corps all along the far-flung battle line, from Leningrad to the Caucasus. These contributions to medicine are the results of twenty-five years of untiring effort, during which the Soviet-Union has built up an impressive system of public health and medicine. In hundreds of scientific research institutions behind the battle line, thousands of physicians and scientists are engaged in investigations. Yet the results are little known in this country, primarily because until now there has been no organization prepared to exchange medical information although the language in many cases has proved an almost insurmountable barrier. The American-Soviet Medical Society will fill his gap.

Through meetings, the publication of a journal and the establishment of a library of information, the Society will tell physicians of America and members of the allied professions on what problems our Soviet colleagues are working and what steps they are taking to solve them. On the other hand, the Society will send American medical books and periodicals to the Soviet Union in order to keep the Russians informed of scientific developments in this country and to stimulate closer cooperation between the medical corps of the two countries. After the war, as soon as conditions permit, the Society hopes to promote the exchange of students and scientists and to sponsor study tours in the two countries.

The president of the Society is Dr. Walter B. Cannon, professor emeritus of physiology at Harvard University, member of the National Academy of Sciences of the United States and of the Academy of Sciences of the U.S.S.R.

Dr. Henry E. Sigerist, director of the Institute of the History of Medicine, Johns Hopkins University, is the editor of the journal which will be known as the *American Review of Soviet Medicine*.

The temporary offices of the Society are at 130 West 46 Street, New York City.

CORRESPONDENCE

Editor, New Orleans Medical and Surgical Journal
New Orleans

Dear Sir:

On behalf of the Trustees of the Southwestern Medical Foundation, I am writing you concerning a movement now under way to build a great Medical Center for the people of the southwestern area of our country.

It is our desire to acquaint the people of your community with the plans and to keep them informed of progress as we proceed with the program.

For your information, the Southwestern Medical Foundation was given a charter by the State of Texas in 1939 as a non-profit, public institution, with management vested in a Board of Trustees. It is absolutely non-sectarian, deriving its strength and spreading its benefits without regard to creed or denomination. Its aid is to use every practicable means known to modern science to improve the health and happiness of the people of the Southwest. This includes the sponsoring of medical research and teaching, as well as measures designed to improve health.

This Greater Medical Center will contain provision for modern medical education for student doctors and post-graduate students in medicine. It will have adequate facilities and modern equipment for extensive research in the whole field of medicine, both clinical and preventive. Periodic clinics will be held for practicing physicians of the Southwest where they might come to keep abreast of the rapidly expanding developments in

the medical field. It will offer training courses for nurses, laboratory technicians, social service workers, and all interested in the field of public and private health.

While the ultimate goal is a \$25,000,000 Medical Center, the first, an immediate objective, is a fund for one and a half million dollars with which to build and equip Main Medical and Dental School buildings—the first unit of the master plan. The medical center program calls for the establishment of thirty-six hospital and medical institutions on a thirty-five acre tract acquired for that purpose.

The newly organized Medical School of the Southwestern Medical Foundation will open in Dallas on June 21. The Foundation has accepted the applications of former faculty members of the Baylor University School of Medicine and now has a complete faculty. Two hundred and thirty Baylor medical students have applied for admission and will constitute the upper three classes of the new institution. At present only a few places remain open for the freshman class and preference for these will be given the young people of the Southwestern area of our country.

A local campaign is to be launched immediately for the first objective of a million and a half dollars for the main school buildings. In addition, a fund of \$100,000 a year for not less than ten years has been pledged by directors of the Dallas Chamber of Commerce and the Citizens' Council for maintenance and development.

Occasionally, we shall send you literature and news releases and shall be grateful for any cooperation you may give this worthy project.

Our Southwestern territory has no great medical center, and this is the greatest of all existing needs. This Greater Medical Center will make available better medical care for all the people of the Southwest—those unable to pay as well as those who are able to meet their medical expense. The citizens of Dallas are doing their full part in the development of this center.

Sincerely yours,

Southwestern Medical Foundation,

E. H. Cary, President.

WOMAN'S AUXILIARY

The following are the officers of the Woman's Auxiliary to the Louisiana State Medical Society for 1943-1944:

Officers

President—Mrs. George J. Taquino, 18 Fontainebleau Drive, New Orleans.

President-elect—Mrs. Rhodes Spedale, Plaquemine.

First Vice-President—Mrs. W. R. Harwell, 715 Elmwood, Shreveport.

Second Vice-President—Mrs. A. D. Tisdale, Riverside Sanitarium, Monroe.

Third Vice-President—Mrs. D. B. Barber, Pineville.

Fourth Vice-President—Mrs. Thos. Richardson, Minden.

Treasurer—Mrs. Paul Lacroix, 3122 State Street Drive, New Orleans.

Recording Secretary—Mrs. E. Ellender, Houma.
Corresponding Secretary—Mrs. Waldemar Metz, 2437 Jefferson Avenue, New Orleans.

Chairmen of Standing Committees

Archives—Mrs. Jerome E. Landry, 2336 Milan Street, New Orleans.

Bulletin—Mrs. Cassius L. Peacock, 8415 S. Claiborne Avenue, New Orleans.

Cancer Control—Mrs. Edmond Souchon, 3136 Octavia Street, New Orleans.

Doctor's Day—Mrs. C. R. Gowen, 5900 Line Avenue, Shreveport.

Entertainment for Men in Service—Mrs. Arthur D. Long, Jr., 1367 Steele Blvd., Baton Rouge.

Exhibits—Mrs. Donovan C. Browne, 4920 St. Charles Avenue, New Orleans.

Finance—Mrs. Carl Young, 1811 Jahncke Avenue, Covington.

Historian—Mrs. Edward C. Melton, Plaquemine.

Hygeia—Mrs. Robt. W. O'Donnell, 117 Stone Avenue, Monroe.

Indigent Widows—Mrs. Aynaud Hebert, 2013 Napolen Avenue, New Orleans.

Legislation—Mrs. Roy B. Harrison, 2327 Napoleon Avenue, New Orleans.

Organization—Mrs. B. C. Garrett, 4700 Fairfield, Shreveport.

Parliamentarian—Mrs. M. H. Foster, 1316 Albert, Alexandria.

Press and Publicity — Mrs. M. C. Wigginton, Hammond.

Printing—Mrs. Willard Wirth, 402 Vincent Avenue, New Orleans.

Program—Mrs. DeWitt Milan, 1704 Island Drive, Monroe.

Public Relations—Mrs. John S. Dunn, 8410 Pontchartrain Blvd., New Orleans.

Red Cross—Mrs. Clarence B. Erickson, 423 Hernon Avenue, Shreveport.

Revision of By-Laws—Mrs. C. Grenes Cole, 4938 St. Charles Avenue, New Orleans

Councilors

First District—Mrs. Daniel J. Murphy, 127 S. Solomon Street, New Orleans.

Second District—Mrs. Daniel N. Silverman, 47 Versailles Blvd., New Orleans.

Third District—Mrs. C. C. deGravelles, New Iberia.

Fourth District—Mrs. R. T. Lucas, 535 Perremont Road, Shreveport.

Fifth District—Mrs. A. G. McHenry, 1910 Riverside Drive, Monroe.

Sixth District—Mrs. A. W. Martin, 902 Virginia Avenue, Bogalusa.

Seventh District—Mrs. J. D. Frazar, DeRidder.

Eighth District—Mrs. H. O. Barker, Horse Shoe Drive, Alexandria.

The above list represents a fine group of hard working conscientious women from all over the State. I should like to add that even though some of the Parish Auxiliaries have disbanded for the summer, I believe that all members of the Louisiana

State Auxiliary will double their efforts in their defense and American Red Cross work. I also wish for them a very happy and pleasant summer.

Alice S. Taquino, President.

BOOK REVIEWS

Ovarian Tumors: By Samuel H. Geist, M. D. New York, Paul B. Hoeber, 1942. Pp. 527. Price, \$10.50.

The book, by Samuel H. Geist, is in all probability the most complete publication on the subject of ovarian tumors that has, to date, been presented. The book covers all data which are essential as a background for the complete understanding of ovarian tumors and the latter material, usually so difficult, is written in a clear and easily digested language. The author presents a classification which is accurately based on histogenesis, is not the least confusing and is one which should be acceptable to pathologist and clinician alike. The terminology conforms to that currently used and consequently will not confuse the student. The subject material is systematically discussed and includes, besides the anatomy and physiology of the ovary, general considerations of the tumors and very helpful points in the diagnosis of such tumors. All tumors which occur in the ovary are discussed in detail and for each tumor the author includes definition, terminology, the incidence, pathologic anatomy, both gross and microscopic, the clinical aspects, and therapy.

One of the outstanding features of the book is the most extensive bibliography which clearly indicates that the text material represents as nearly a complete coverage of the literature as is possible to present.

The plates are excellent and clearly illustrate the typical appearance of both the gross and microscopic features of the tumors.

J. ALLEN CHAMBERLAIN, M. D.

Blood Grouping Technic: By Fritz Schiff, M. D. & William C. Boyd, Ph. D. New York, Interscience Publishers, Inc., 1942. Pp. 239. Price, \$5.00.

The authors of this little volume have compiled a very adequate presentation of blood grouping technics. They do not purport to have completely reviewed all the material pertaining to the subject, but have endeavored to present such procedures as they have found practical and reliable from their own experience. The subject matter is comprehensively treated and written in a lucid, readable style. Drs. Schiff and Boyd have employed a decimal system in arranging the headings and sub-headings of their subject matter which this reviewer at times finds rather distracting, although it is intended to clarify the relationship

between the various topics under discussion.

The book is divided into three parts. The first is a brief consideration of the theoretical principles underlying blood grouping.

The second part contains clear and concise directions for various technics of blood grouping, some applicable for use in the average laboratory, and others of a more highly specialized nature. There is valuable information given here concerning the apparatus required in such studies, methods of obtaining and preserving specific sera, and interpretation of tests in determining various blood groups, as well as a discussion of the commonest sources of error in such determinations. In addition to comprehensive studies of the groups O, A, B, and AB, they also discuss the determination and significance of sub-groups and A and AB, types M and N, and the P and Rh factors.

The third and most detailed section deals with special applications of blood grouping technics. Of most general interest at present is that portion which deals with blood grouping in relation to blood donors—fully discussing technics of typing and cross-matching, additional requirements and examination of donors, use of the "universal" donor, and emphasizing the errors in technic and judgment which may lead to transfusion accidents and reactions. There is also included here a brief discussion of serum and plasma blood banks and their operation, as well as the use of substitutes for blood. The authors also present in this section a rather lengthy discussion of the uses, procedures, and limitations of the role played by blood grouping in forensic medicine, as in cases of disputed parentage and stains at the scenes of violence. The book concludes with a discussion of the still hotly disputed status of blood grouping in relation to anthropological studies.

GEORGIANA VON LANGERMANN, M. D.

Biochemistry and Morphogenesis: By Joseph Needham, F. R. S. Cambridge, at The University Press, and New York, The Macmillan Company, 1942, pp. xvi + 787, figs. 328. Price, \$12.50.

In an earlier book (*Chemical Embryology*, 1931) Needham reviewed existing knowledge of the chemistry of the developing embryo and of the materials from which it is formed. He now brings this information to date and extends his review into the more recently investigated phases of developmental physiology, notably in connection with substances which act as morphogenetic hormones, substances

arising within the embryo and capable of inducing differentiation of structures. The fundamental character of the problems involved is indicated in the fact that the cited studies embrace the whole animal kingdom, ranging from protozoa through mammals, and that even some observations on plants find a place in the account. The book is in three parts. Part I concerns the substrate of embryonic development—the composition of eggs, their environment, nutrition of the embryo, the mammalian placenta and related topics. Part II is devoted to the factors which control morphogenesis, with special emphasis on organizers and genes. Part III considers the metabolism of the embryo, respiration, polarity, the disorganization of developmental processes.

The author states: "The whole object of the book, was, after all, to show that the fields of chemistry and morphology are not so sundered as is often supposed. Organizing relations are found at the molecular level and at the colloidal and at the paracrystalline level, the level of protein macromolecules and highly polymerised substances, just as clearly as at the anatomical level itself. Although we are still in the earliest stages of any real theory of living organization, we can yet see that biological order, like crystal order, but on a much more complicated plane, is a natural consequence of the properties of matter, and one characteristic mode of their manifestation." Both the collection of factual material and the points of view stressed by Needham make this book a useful reference for the embryologist, and indeed for any worker in the field of biology.

HAROLD CUMMINS, Ph. D.

Fundamentals of Immunology: By William C. Boyd, Ph. D. New York, Interscience Publishers, Inc., 1943. Pp. 446. Price, (not yet listed).

This excellent introduction to immunology serves to acquaint medical students, chemists, biologists and others with the basic principles of the science. The chief emphasis is on serology but the book has a slightly wider scope for methods of laboratory practice and some clinical applications are also discussed. One might wonder how a biochemist would interest himself in immunology and allergy. The answer is obvious when it is realized that the mechanisms involved are chemical. It is true of course that the chemical structure of the various antibodies is not known. Progress is being made rapidly however and the time may not be too distant when antibodies can be produced synthetically thus obviating the use of foreign sera on the one hand and long periods of desensitization on the other. Another excellent feature to the book is the use of accepted statistical principles. The book can be highly recommended.

VINCENT J. DERBES, M. D.

Reveal Lithiasis: By Charles C. Higgins, M. D. Springfield. Charles C. Thomas, 1943. Pp. 140. Price, \$3.00.

Especially in these busy days of surgeons left at home (and even those in the armed forces), there is quite apt to be a concentration on *surgery* for renal calculi, and a "forgetfulness" of the causes of these stones and their prevention, especially postoperatively. In his excellently written, compact and precise book, Dr. Higgins gives a brief summary of the causes of renal stones with emphasis on diet and vitamins. There are some charts of various foods and diets. For those who wish to analyze stones, there are some very good chemical qualitative methods of testing stone compositions. Briefly, various operations are described and illustrated. An ample bibliography is supplemented. All surgeons, as especially urologists, will benefit greatly by reading *Renal Lithiasis*, especially in line with Luby and Albright's recent works on dissolving stones *in vivo*.

DAVID H. SCHNEIDER, M. D.

Fractures: By Paul B. Magnuson, M. D., F. A. S. C. Philadelphia, J. B. Lippincott Co., 1942, 4th Edition. Pp. 511. Price, \$5.50.

This is the fourth edition of a book which has proved to be very popular among the profession. It merits the popularity mainly because it is practical and shows satisfactory methods of treating the different fractures. The text is clear and concise in its description of methods and is happily not prolix. The illustrations are excellent.

The reviewer has little but praise for this book. It is a very reliable guide to the treatment of fracture. In certain instances the author, as he says in his preface, has given prominence to the method he prefers, with which one may occasionally disagree slightly, but not completely. The reviewer feels that one of the few obvious imperfections is the lack of satisfactory illustrations and didactic description of internal fixation of the hip.

HOWARD MAHORNER, M. D.

Dr. Bard of Hyde Park: By J. Brett Langstaff. New York, E. P. Dutton & Co. Inc. 1942. Pp. 365, illus. Price, \$3.75.

This biography of the most famous of New York physicians in Revolutionary times, is a delightful account of a distinguished man as well as a most fascinating record of medical practice of almost 200 years ago. Dr. Bard was the son of one of the best known doctors of New York. His family was well to do and young Bard had the opportunity of obtaining a splendid training in medicine. He spent some years in Europe and most of the time in Edinburgh and had advantages which few young doctors in the colonies had at that time. As he was a man of indefatigable energy and great ambition, he early conceived, while still a student, of establishing a medical school in New York. His

intellectual equipment was such that it was not a difficult matter for him to interest others in the opening of a medical school. While it is true that the primary endeavors were not entirely successful, ultimately through this most ambitious and capable physician there was established a medical school which has become the medical department of Columbia University and of which he was the first and for many years the Dean.

Bard was not only interested in scientific and pedagogic medicine, more particularly in botany and materia medica, but he had an enormous practice. It was said of him that any one in New York City of any prominence who became sick sooner or later was seen by this well known consultant and practitioner.

Bard was a medical man essentially but in those days the medical man was also an obstetrician. His book on "Theory and Practice of Midwifery" was the most popular book on obstetrics in his day and was sold all over the United States.

Rather interesting as a sideline of his medical activities, he was responsible for the establishment of a botanical garden which ultimately became the property of Columbia University, on the land on which nowadays stands Rockefeller Center. This land was purchased for almost nothing and at the present time the ground rent is well into the millions.

Bard's father established a country seat for himself in Hyde Park which must have been a truly wonderful estate. Bard Senior had difficulty, due to the revolutionary times, in maintaining this estate but ultimately his son inherited it and they were able to keep it in the family. Hyde Park is well known to present day Americans as the home of our President. The Roosevelts were already established at Hyde Park and were intimately connected with the Bards. One of the Roosevelt family studied medicine. After eight years of practice he retired to Hyde Park where his son James and his grandson, Franklin Delano Roosevelt succeeded Sam Bard as senior warden of the Hyde Park church.

The most publicized event in the life of Bard was probably his care of Washington, when according to the writer of the day, he was able to save the life of the President, when he had an enormous carbuncle on the thigh which Sam Bard, with his father in consultation, opened and drained. Rather interesting that for his attendance on the then President, Dr. Samuel Bard charged approximately 60 pounds, while Dr. John Bard, his father, made a charge of 25 pounds for his consultative advice. Fees that were charged at that time were not large but apparently the Bards were good chargers and because of their enormous practice both the father and son amassed comfortable fortunes.

It would be impossible to recount all of the activities in the fields of medicine, of science and of civic betterment and of intellectual activities that

Bard was interested in, furthered and often originated. He was a great physician and a great man. Those who read of him will enjoy the masterful way his life is presented to the reader by Mr. Langstaff.

....

J. H. MUSSER, M. D.

Medical Application of the Short Wave Current:

By William Bierman, M. D., 2d ed.; with a chapter on Physical and Technical Aspects by Myron Schwarzschild, M. A. Baltimore, William Wood, 1942. Pp. 344. Price, \$5.00.

This rather extensive review of the subject in the enlarged second edition of Bierman's book is quite complete in detail. The extent of the subject in general can be appreciated from the index, which in itself covers twenty-three pages in double column. The text includes the recording of the application of the short wave diathermy to most medical conditions, and its value is impartially appraised in the comments by the author.

The history of the discovery and the development of the modern application of diathermy by short wave is completely and interestingly told. Likewise, the explanation of the physics of the application of short wave and the technic are completely described and well illustrated. These chapters are further emphasized in Chapter V on Specificity. In the succeeding chapters the application of this therapy to the long list of conditions is completely described and evaluated. The work of authorities in each of the subjects is quoted at face value. There does not seem to be any attempt to lead one to believe that this therapy is a panacea, but rather to recite what has and can be done.

The author seems to indicate quite clearly that there is a difference in the approach to the treatment of pathological conditions by means of short wave over other and more orthodox means, and that the treatment by short wave therapy should be well understood, before being attempted. Your reviewer agrees most heartily in this concept, and would like to add that the same complete understanding should be had of any physical application other than short wave that is made.

The ever increasing popularity of physical means in the treatment of pathological conditions of every nature makes it necessary for all members of the medical profession to understand the different modalities; therefore, this book on short wave should be read, to get a well rounded idea of what can or cannot be done with short wave therapy in the light of our present knowledge of the subject.

WILLIAM A. LURIE, M. D.

The Antigonadotropic Factor With Consideration of the Antihormone Problem: By Bernhard Zondek and Felix Sulman. Baltimore, Williams and Wilkins Co., 1942. Pp. 125. Price, \$3.00.

This small (185 pages) but comprehensive monograph is a valuable contribution to the subject of "antihormones," which is as yet little understood.

Collip in 1934 advanced a therapy to explain the fact that animals long treated with thyrotropic hormones of the anterior pituitary would become resistant to that hormone. He found that when normal white rats were given thyrotropic hormone their basal metabolic rates were markedly increased. Yet if large doses of the hormone were administered the B. M. R. fell to as low as -29% . The serum of these animals when injected into normal animals was capable of inhibiting the thyrotropic effect of injected hormones. This inhibiting agent found in the serum of animals who have been treated with thyrotropic hormones, capable of producing this inhibiting phenomenon, was termed by Collip and Anderson an "antihormone." Collip stated that "for each hormone there may be an opposite or antagonistic principle." This antagonist is present in the normal subject but may not be detected until it exceeds in amount the hormone substance with which it is balanced. Whether or not these inhibiting substances may be properly called antihormones or must merely be considered antibodies produced by protein antigens is still widely debated. Werner feels that they are true antibodies. Twombly, who has demonstrated that long time estrogen therapy does not produce refractory phases in animals, feels that there is no such thing as an antihormone, but merely a protective substance of the nature of a protein antibody. Thompson feels that they should be considered immune bodies but should properly be called "antihormones" with as much rationale as we talk about antitoxins.

As early as 1926 Zondek in Germany and Philip Smith in the United States had independently discovered the occurrence of a similar phenomenon with the use of the gonadotropic hormones, i. e., female animals long treated with gonadotropic hormones of the anterior pituitary would show a retrograde involution of the genital tract. Collips' theory advanced in 1934 explained this phenomenon on the basis of an antihormone to that of the gonadotropic hormone. Zondek and his collaborators have contributed largely to the subject of "antigonadotropic factors" and much of their experimental work, some of it published for the first time, appears in this monograph.

The clinical importance of the antihormones rests upon the fact that they may produce a refractory state which will interfere with hormonal therapy, or that the antihormones may come to be of value in the therapy of endocrine dysfunctions. Thus, Duff, who administered gonadotropic hormones to females with dysmenorrhea and to males with hypogonadism, was able to show that after several months the serum of these patients contained an antihormone which tended to decrease the effectiveness of further therapy.

This book is divided into five chapters. The first chapter is quite brief and deals with the history of the discovery and conception of antihormones. Chapter II considers Collips' theory.

Chapter III is devoted to the antigonadotropic factor and contains a review of a vast amount of research work in this field done by the authors (particularly Zondek). Some of it is published here for the first time. It of course adequately reviews the contributions of others. Chapter IV is by far the most fascinating so far as the clinician is concerned, for it considers the "clinical significance of the antihormones" and gives some hint as to the role this newer knowledge may come to play in organotherapy. Chapter V concerns itself with a brief consideration of the mechanism of the antigonadotropic reaction. A comprehensive bibliography and good index concludes the book.

This monograph, though of limited appeal, is an interesting and valuable contribution and is recommended to those interested in endocrine therapy.

B. B. WEINSTEIN, M. D.

The Hemorrhagic Diseases and the Physiology of Hemostasis: By Armand J. Quick, Ph. D., M. D. Springfield, Illinois, Charles C. Thomas Company, 1942. Price, \$5.00.

Armand Quick renowned for his contributions to the physiology of hemostasis distinguishes himself further with this excellent monograph on the hemorrhagic diseases. His research accomplishments and exemplary presentation of the Beaumont lectures fitted him well to the timely task of summarization and evaluation of our knowledge of the physiology of hemostasis.

In condensed three hundred and forty pages he placed a minimal twenty-four illustrations and eight demonstrative tables to present a thorough laboratory and clinical survey of the subject. This book must not be misunderstood to be a treatise on hematology; it is limited strictly to its subject. The arrangement is excellent, the historical outlines are interesting. The average clinician will find the encroachments on physiological chemistry easily readable. The factors: thrombin, prothrombin fibrinogen, thromboplastin and platelets have each a full chapter of consideration. The fundamentals of coagulation are presented and related. The anticoagulants are classified, evaluated and clinically analyzed.

There are seven chapters devoted to the fundamentals. The principle known entities classified as hemorrhagic diseases are then completely covered with emphasis on diagnosis and therapy. Most emphasis is, however, on hemorrhagic diathesis of avitaminosis K which is covered in unequal completeness. An appendix of thirty pages presents the technic of practical clinical studies essential to a diagnostic survey.

All clinicians should enjoy the capable work the references of which carry one well into 1942. This work and Quick's other efforts have certainly added impetus to the study of the hemorrhagic disease. We should all appreciate the significance of this stimulus; none of us can afford to be ignorant

of the wealth of knowledge Quick renders so easily available.

GORDON MCHARDY, M. D.

A Venture in Public Health Integration; The 1941 Health Education Conference of the New York Academy of Medicine: New York. Columbia Press, 1942. Pp. 56. Price, \$1.00.

This small volume presents certain papers given at the 1941 New York Health Education Conference. These papers should be of interest to doctors, health officers, nurses, and others who are attempting to integrate the problems and programs of the official health departments of the voluntary health organizations and of the medical profession.

R. H. HEEREN, M. D.

Tables of Food Values: By Alice V. Bradley. Peoria, Illinois, Manual Arts Press, 1942. Pp. 224. Price, \$3.50.

This new edition of an extremely useful book represents extensive revision and enlargement. The material presented is accurate and completely up to date. The book is introduced by two chapters, the first of which deals with the components of the diet, the second with methods of diet calculation and menu planning. The function of each of the essential foods is briefly indicated and the constituents of an adequate diet are outlined. Foods which are good sources of the various dietary essentials are listed in several tables. The main portion of the book is divided into two parts. Part I consists of twenty-seven tables which give the values of average servings, or of common household measures, of various classes of food. Part II consists of a similar group of twenty-seven tables giving values for 100 gram portions of the same foods. Values for a number of prepared foods are included together with the recipes on which the calculated values are based. The complete nutritive value of any one food, raw, or cooked, is given in a single table which is a most

practical arrangement, saving the reader both time and effort. Values are given for the following components: protein, fat, carbohydrate, calories, calcium, phosphorus, iron, vitamins (A, B₁, B₂, C) and the reaction produced in the tissues (acid, or alkaline). The charts give all the data needed for the rapid and accurate calculation of specific diets.

This excellent book is highly recommended for physicians, as well as for dieticians, teachers, and others interested in nutrition.

GRACE A. GOLDSMITH, M. D.

PUBLICATIONS RECEIVED

Williams & Wilkins Company, Baltimore: The Role of Nutritional Deficiency in Nervous and Mental Diseases, Proceedings of the Association for Research in Nervous and Mental Diseases, Volume XXII. Allergy Anaphylaxis and Immunotherapy, by Bret Ratner, M. D. Human Neuroanatomy, by Oliver S. Strong, M. D. and Adolph Elwyn, M. D. The Physiological Basis of Medical Practice, by Charles Herbert Best, M. A., M. D., D. Sc. (Lond.), F. R. S., F. R. C. P. (Canada) and Norman Burke Taylor, M. D., F. R. S. (Canada), F. R. C. S. (Edin.), F. R. C. P. (Canada), M. R. C. S. (Eng.), L. R. C. P. (Lond.). Injuries of the Skull, Brain and Spinal Cord, edited by Samuel Brock, M. D. An Atlas of the Basal Ganglia, Brain Stem and Spinal Cord, by Henry Alsop Riley, M. A., M. D.

Lea & Febiger, Philadelphia: The Therapy of the Neuroses and Psychoses, by Samuel Henry Kraines, M. D.

Charles C. Thomas, Springfield, Illinois: Whooping Cough, by Joseph H. Lapin, B. Chem., M. D.

The Macmillan Company, New York: Managing Your Mind, You Can Change Human Nature, by S. H. Kraines, M. D. and E. S. Thetford.

Philadelphia Medicine, Philadelphia: A Guide to Practical Nutrition. A series of articles on nutrition, sponsored by the Committee on Nutrition and Deficiency Diseases of the Philadelphia County Medical Society.

New Orleans Medical

and

Surgical Journal

Vol. 96

AUGUST, 1943

No. 2

BRUCELLOSIS

HARRY J. SCHMIDT, M. D.
CONVENT, LA.

Brucellosis today presents a most perplexing problem to the medical profession. In spite of the excellent work done by competent investigators, most physicians do not acknowledge the widespread prevalence of the disease. Several factors are responsible for this. No practical and accurate diagnostic procedures avail in most cases. The picture varies to such an extent that clinical diagnosis is almost impossible without definite knowledge of the presence of Bang's disease in the community. The lack of adequate treatment deprives us of the use of the therapeutic test. Thus one may readily understand how the condition might be widespread without its prevalence being recognized.

Judging from the possible sources of infection, it is not unlikely that brucellosis may be quite common. Evans¹ estimates that between 6 and 10 per cent of the cattle excrete the organisms in milk. On a recent survey made in St. James Parish by the U. S. Department of Agriculture, 19.5 per cent of the cows showed positive reaction for Bang's disease. From personal observation of the disease in cattle, I believe the incidence to be much greater. The infection is not confined to any particular class of society. All raw milk drinkers, users of dairy products and handlers of raw meat, including housewives, may be exposed to the disease. The possibility of transmission from human excreta must be considered; to these vast groups must be added the cases of probable congenital infection;

but the most common source of infection is milk.

The true state of affairs is more apparent to the country practitioner who is able to observe the entire community and to determine the actual sources of infection from the family cows. The author has on many occasions had cattle examined to prove the source of infection when diagnosis by clinical and laboratory methods was impossible, and has even learned from the "family history" that an old cow had repeatedly aborted ten or more years previously.

The present laboratory tests are inadequate for the diagnosis of brucellosis. The agglutinins do not develop in the majority of cases in the acute or chronic phases. The organism has been recovered from patients who did not show the presence of specific agglutinins.² We are apt to lose sight of the true concept of the agglutination test. Fundamentally, it is not a diagnostic procedure, although it may be used as such under certain circumstances. It is in reality, an index of the response of the host to establish immunity against a given infection. It is of definite value in cases of acute self-limiting diseases in which either immunity is established, or the host succumbs. In a chronic prolonged illness such as brucellosis or Bang's disease, in which the host is unable to develop sufficient antibodies to overcome the infection, it is apparent that we cannot always expect a positive agglutination.

The skin test is not sufficiently conclusive as a basis for diagnosis. The majority of patients tested show a positive reaction.

This merely indicates the widespread prevalence of the organism and not active infection. Since the reaction is allergic it may be positive in a patient who has been drinking milk containing the killed organisms. In an active case, the degree of the reaction does not indicate the severity of the infection, and the absence of reaction following the intradermal test does not exclude the possibility of infection. Positive blood cultures have been obtained in patients showing negative skin tests¹⁴ and negative skin reactions have been noted in patients definitely known to have been drinking infected milk.

The opsonocytophagic index does afford some indication of the extent of immunity present, but the technic is complicated and is subject to error and the use of this procedure is not possible for many physicians. A negative opsonocytophagic index and a positive skin reaction in the presence of suggestive symptoms constitute a diagnostic picture of some significance.

It is generally admitted that the only positive laboratory diagnosis consists of the isolation of the organism. This procedure, however, is generally speaking, beyond the facility of the general practitioner.

Unlike other diseases, brucellosis has been shown to cause definite change in every organ and tissue of the body. This accounts for the marked variation in the clinical picture. The disease does not necessarily begin with an acute onset. Numerous investigators have definitely shown that former ideas regarding the onset and duration of the infection must be discarded. It is impossible to classify the various types of fever. The disease must be considered as having an acute and chronic phase. In the acute phase the hyperpyrexia may be present for one day or may continue for weeks. A patient may establish sufficient immunity following the acute phase to overcome the infection completely, the condition remaining undiagnosed. There are no pathognomonic signs or symptoms.

The chronic phase may continue for years without an acute exacerbation, or acute phases may occur at irregular inter-

vals, lasting for several days or more with subsequent improvement. In the chronic phase, the patient is usually unaware of the presence of a low grade fever. The usual complaints are weakness, vague pains such as an obscure headache, arthritis, myalgia, neuralgia, epigastric distress, cough, mental depression, insomnia and many other less commonly noted symptoms. Weakness and fatigue are generally present with one or more of the above complaints. Positive findings on physical examination are usually absent. Loss of weight is not commonly noted but careful check of temperature may show the presence of a low grade fever. Low blood pressure is frequently present. In these cases fatigue is usually attributed to the hypotension and the true diagnosis is missed.

Subclinical cases have been noted in which the patient was found to be having a low grade fever without complaints. Development of symptoms at a later date makes the diagnosis more apparent.

The disease may exist in a chronic form without the presence of fever. These cases are not usually diagnosed and the patient is considered to be neurotic or neurasthenic.

Brucellosis frequently occurs as a concurrent infection. In these instances the clinical picture is obscured to such an extent that diagnosis is most difficult. Adequate supportive treatment may assist the patient in overcoming the *Brucella* infection without its presence being discovered. An individual may harbor the organism without active infection for a period of years, the loss of immunity following an acute illness, pregnancy or surgery resulting in a subsequent low grade fever.

To illustrate the various points mentioned, the following cases are briefly reported:

CASE No. 1

In July 1942, a white male, aged 22, complained of headache and fatigue. He admitted having had high fever of one day's duration two weeks previously. Physical examination revealed a temperature of 100° and a chronic suppurative otitis media said to be present since infancy. A mastoidectomy was performed in 1929. A specimen of blood was sent to the laboratory. Two days later

the patient was confined to bed with a temperature of 103°. The fever subsided the following day and has not recurred to date. The laboratory report showed a positive agglutination for *B. abortus* in a dilution of 1-320. The family cow was found to have Bang's disease.

This case shows the short duration of the acute illness. No specific therapy was given. There is a probability that the otitis media may be of *Brucella* origin. During the patient's infancy the father was obliged to dispose of his cattle because of the prevalence of abortions in them. Cody³ reports suppurative otitis media in brucellosis and involvement of the mastoid cells in *Brucella* infections has been reported by Oppenheimer, Dennis and Badeen.⁴

CASE No. 2

In June 1939, a white female, aged 16, complained of fatigue and low grade fever of six weeks' duration. Physical examination revealed no important findings. Agglutinations were negative for the *Brucella* and typhoid groups. The Mantoux was likewise negative. Supportive treatment resulted in no improvement. In September 1939, the patient suddenly developed chills and fever which persisted for six days, with a maximum temperature of 105°. Following this acute phase, agglutinins for *B. abortus* were found to be present in dilutions up to 1-350.

There was no past history of a previous fever indicating that the onset was insidious. The patient was given a stock vaccine and remained perfectly well until January 1943. At this time she complained of fatigue, nervousness and insomnia. The temperature was found to be 99°. Many other cases in the series suggest that an insidious or mild onset is quite common. Simpson⁵ states that "less than 10 per cent of patients with chronic brucellosis have experienced previous acute febrile illness compatible with a diagnosis of acute brucellosis." This case also illustrates that the acute phase stimulated the formation of agglutinins not present during the chronic phase.

CASE No. 3

In November 1937, a white female, aged 35, gave a history of a hyperpyrexia of three weeks' duration. The temperature was normal for three weeks after which the fever returned for a three week period. The patient was persistently treated for malaria. In studying the case it was found that

the agglutination was positive for *B. melitensis* but negative for *B. abortus*. The family cow was checked for Bang's disease and found to be a positive reactor. The high fever subsided without specific therapy and the patient was later given a stock vaccine. Excellent health continued until May 1942, when the patient complained of marked weakness, vague pains and low grade fever. The blood showed negative agglutinations for both *abortus* and *melitensis* and an opsonocytophagic index of 3.8 organisms per leukocyte. These findings indicated loss of immunity.

This case illustrates that cross-agglutination cannot be depended upon. Had *B. abortus* been used alone the case would not have been diagnosed. It likewise shows the long period over which the infection can remain dormant. The second illness was probably a recurrence and not a reinfection, since no raw milk was used after the patient's first experience with the disease.

CASE No. 4

In 1937, a white male, aged 31, suddenly became acutely ill with chills and high fever. The patient was hospitalized and treated for what was apparently acute pyelonephritis. The fever subsided in three weeks. Since this acute illness the patient has been a semi-invalid in spite of excessive gain in weight, the only complaint being marked weakness. Physical examination was essentially negative. All laboratory data were normal except for a persistent pyuria which did not respond to any of the excellent urinary antiseptics. The patient was examined by several competent physicians, all agreeing on a diagnosis of neurosis. There was no recurrence of the fever. In 1942, the patient was checked for a possible *Brucella* infection. The agglutination was positive for *B. abortus* in a dilution of 1-80 and he had a marked local and systemic reaction following the skin test. The family cow was found to be a positive reactor for Bang's disease.

This case definitely shows that fever is not a necessary symptom. The urinary infection was apparently of *Brucella* origin. Extreme weakness, causing disability, was present in several other cases. It is the most commonly noted symptom of brucellosis and is a decisive factor in the economic importance of the disease.

CASE No. 5

In 1942, a white female, aged 34, complained of an atrophic arthritis, involving the arms and especially the wrists and hands. There was also a periodic low grade fever and weakness. No apparent focus of infection could be found. The condition did not respond to the usual therapeutic

measures, including the use of gold intravenously. A careful review of past illness revealed that the patient suffered a high fever in 1936. A clinical diagnosis of estivo-autumnal malaria was made at the time, although no plasmodia were found. The patient was given quinine and the temperature returned to normal in six days. Occasional low grade fever and the joint pains dated from that illness. Further investigation yielded the following data: agglutinations—negative; skin test—positive; opsonocytaphagic index—negative. The milk used by the patient was obtained from a dairy later found to be heavily infested with Bang's disease. A special *Brucella* vaccine was administered with excellent results. The patient has shown definite general improvement, with subsidence of the swelling of the involved joints.

Two other uncomplicated cases of arthritis were seen. Joint pains are frequently present in brucellosis. All such cases not showing a definite focus of infection should be investigated for a possible *Brucella* infection. A suggestive past history and associated symptoms greatly aid in the diagnosis.

CASE No. 6

In 1941, a white male, aged 38, was returned from hospital for continuation of artificial pneumothorax procedure. In spite of the fact that he had had a satisfactory collapse since 1940 and had been free of acid-fast organisms since April 1941, he suffered a continuous low grade fever. There was clinical evidence of improvement, such as marked gain of weight and disappearance of cough and expectoration. The cause of the fever could not be attributed to the pathology of the lungs. The patient was checked for brucellosis and the following data obtained: agglutinations—negative; skin reaction—positive; opsonocytaphagic index—negative.

This case illustrates a concurrent infection of brucellosis, clouding a definitely diagnosed tubercular infection. Brucellosis is frequently associated with tuberculosis either as a concurrent infection or in mistaken diagnosis.⁶ Cough and fever are common findings in brucellosis. With the high incidence of Bang's disease it is not surprising to find brucellosis in the most likely host, the tuberculous subject.

CASE No. 7

In December 1938, a white male, age 6, was seen with a hyperpyrexia of 104°. The temperature was normal in the mornings, during which time the patient was quite comfortable and wanted to leave the bed. At noon the fever would rise to 105° and return to normal by midnight. A slight

cough was present during the elevation. The leukocyte count was 22,250. The roentgenologist reported a small cloudy area—probably a pneumonitis—at the base of one lung. After six days the fever subsided and the patient made an apparent recovery. Small doses of sulfanilamide were administered for several days. Clinically the illness did not resemble a pneumonia.

Several months later the patient was found to be suffering from a low grade fever that has persisted to date. His gain in weight has been excessive and he has had no complaints. At one time the fever was attributed to diseased tonsils, at another, to acute rheumatic fever. There have been no cardiac involvement or joint pains. The agglutination for *B. abortus* was negative and the skin test definitely positive. Tonsillectomy was performed in 1939 without change in the course of the temperature. In 1941, the patient was confined to bed with a fractured limb, without the slightest variation in the course of the low grade fever.

The family history was suggestive of brucellosis. The mother has had a periodic low grade fever with an atrophic arthritis and weakness for several years. The case was definitely so diagnosed. Improvement followed the use of a stock vaccine. The father has had an obscure low grade fever of unexplained origin. A sister and a brother have had recurrent periods of fever although all appear to be in excellent health. The family milk supply was obtained from a herd known to be infected with Bang's disease.

This case illustrates the pulmonary involvement seen in acute brucellosis. A similar condition was discovered in another child who had a recurrent hyperpyrexia. Bogart,⁷ Lafferty and Philips⁸ have demonstrated the pulmonary changes in *Brucella* infections. The presence of fever in other members of the family is to be expected since there is a common source of infection. This has been noted in many family groups.

CASE No. 8

In July 1942, a white male, aged 30, gave a history of having a marked edema of the right side of the face and right ankle of two months' duration. He complained of associated pain, especially in the right leg. Headache and fatigue were likewise present. The case was studied in a clinic without diagnosis. Physical examination revealed the edema as stated above. Blood pressure was 105/70. Temperature was 99.3. Urinalysis was negative. Sedimentation index 12 mm. in one hour. The leukocyte count was 7,400 with a normal differential. In 1939, the patient was found to have suffered a low grade fever on examination for life insurance. An industrial examination in 1940 again revealed the presence of fever. On these occasions the patient was robust, had no complaints

and was apparently in sound health. With the past history of an obscure fever, the case was studied as one of possible *Brucella* infection. Agglutinations for abortus and melitensis were negative. The opsonocytophagic index showed an average of less than one bacillus per leukocyte. The reaction following skin test was definitely positive. The edema eventually subsided but the periodic low grade fever and fatigue have persisted, the temperature at times ranging as high as 102°.

This case was apparently of the sub-clinical type. Loss of immunity could be attributed to overwork. The edema was probably of neuritic origin. This condition has been noted by Hughes and also by Harris.⁹ Edema was observed in four other suspected cases.

CASE No. 9

A white male, aged 44, was observed and treated for a period of ten years, during which time he persistently complained of fatigue and vague pains. These symptoms dated back to an attack of "supposed malaria" 20 years previously. The malaria was clinically diagnosed and lasted for three weeks in spite of quinine therapy. The patient appeared to be in excellent health. Physical examination by many competent physicians revealed only a hypotension. No improvement resulted from symptomatic treatment. The patient was persuaded to record his temperature for a five minute period at various times of the day. He was found to be running a low grade fever with a maximum temperature of 100°. He was not conscious of the fever which apparently had been present for years. The agglutinations for abortus and melitensis were negative. The skin reaction was positive. The opsonocytophagic index was negative. The milk supply was obtained from a herd of which 60 per cent were positive reactors for Bang's disease. No plasmodia could be found.

This case demonstrates the obstinate chronicity of brucellosis and the necessity of adequately recording the temperature. *Brucella* patients are frequently unaware of the presence of fever. In 1942 I had occasion to treat a case definitely diagnosed. This patient was likewise known to have been drinking infected milk. The fever persisted for six months going at times as high as 103°. The patient was never confined to bed and apparently experienced no ill feeling from the elevated temperature. The history of malaria as in the case reported has frequently been noted and will be discussed later. The above case

is probably the most common variety of brucellosis.

CASE No. 10

In 1941 a white female, aged 42, gave a history of having a low grade fever subsequent to a pregnancy in 1937. The fever was continuous with a maximum temperature of 100°, associated with weakness, muscular and joint pains. The past history showed two acute illnesses; typhus fever, clinically diagnosed in 1920, and acute tonsillitis with high fever in 1932. The patient was hospitalized in 1938 for diagnostic purposes. All laboratory data at this time were essentially normal. The possibility of chronic brucellosis was suggested. In 1940, the family cow had been found to be a positive reactor for Bang's disease. There was presumptive evidence that the infection was present in the barnyard since 1930. The patient does not recall having a low grade fever prior to 1937. Following the use of a stock bacterin, the temperature remained normal with clinical improvement for seven months, the fever and symptoms then returned. The patient's mother has been having a low grade fever with multiple complaints since an attack of pneumonia in 1940. X-ray examination showed no residual disease of the chest. The patient's husband has had a periodic low grade fever with fatigue for two years. These cases have been investigated and no other apparent diagnosis is evident.

Two of the cases illustrate apparent loss of immunity, one following pregnancy, the other following pneumonia. The pneumonia could not be attributed to the brucellosis. In five other cases suspected of being *Brucella* infections fever was noted following delivery without evidence of puerperal or urinary infections. Bang's disease is known to flare up under similar circumstances in the cow.

CASE No. 11

In 1937, a white female, aged 24, was seen for prenatal care. At about the seventh month of gestation, the patient developed uterine contractions and was advised to go to a hospital where incubator facilities would be available. A dead fetus was delivered and the patient was found to have a four plus Wassermann. A later check showed the Wassermann, Tschernogowbou and precipitin to be negative. Wassermann reactions on the husband and other members of the family were negative. Several months later, a continuous low grade fever was noted accompanied by joint pains and weakness. The agglutination was positive for melitensis and negative for abortus. The skin reaction was positive. The Wassermann was again reported positive. The family cow was discovered to have

Bang's disease. The possibility of a false Wassermann reaction was considered. Treatment was instituted for brucellosis which could have accounted for the abortion. A stock vaccine was administered and the fever continued for four months. The family moved from the community and the patient was not seen again until 1940 at which time she was again found to be seven months' pregnant. Both the Kolmer and Kahn tests were positive. The child was given the benefit of the doubt and the patient received anti-luetic treatment until term. Following delivery, complete laboratory data were obtained. The first check showed the Wassermann and Kahn to be doubtful and the Kline weakly positive. Four days later the Wassermann was unsatisfactory, the Kahn was negative and the Kline was positive. Two days later all three were negative. The opsonocytophagic index showed less than 40 per cent of the cells with marked phagocytosis. According to Huddleson's interpretation, this would indicate active infection.¹⁰ The agglutination was positive for abortus in 1-40. *B. melitensis* was not used. The patient also showed a positive agglutination for *B. proteus OX 19* in a dilution of 1-320.

The Wassermann, Kahn and Kline tests on the child were negative. Agglutination for *B. abortus* was likewise negative. No growth was found on blood culture.

Six months following delivery the Wassermann and Kahn were positive. Agglutinations for *B. abortus* and *B. proteus OX 19* were negative. The patient continues to suffer a low grade fever with backache and fatigue.

The author suggests as an original observation, the possibility of false Wassermann reactions in chronic brucellosis. False reactions are known to occur in many other diseases, a subsequent check usually revealing the error. Brucella infections of a chronic nature commonly present vague complaints that may be attributed to lues. In the case mentioned the inconsistency of the reports corresponds to the characteristic recurrency of brucellosis. Neither the mother nor the child showed any clinical evidence of lues.

Four other cases have been suspected of having false luetic reactions. Three have been definitely diagnosed as brucellosis. In all of the cases there is sufficient evidence to doubt the presence of lues, when thus accompanied by suggestive histories and symptoms of Brucella infections.

Abortions have been occasionally noted in patients suspected of or known to have

brucellosis. The agglutination for *B. proteus X 19* in a high dilution was noted in another ambulatory patient having brucellosis. It was also noted in three other patients having a hyperpyrexia of four days' duration. The illnesses could not be distinguished from brucellosis. Calder¹¹ has called attention to the presence of proteus agglutinins of high titer in some cases of Brucella infections, sometimes exceeding those of the Brucella agglutinins.

These reports have been selected from a series of 25 cases definitely diagnosed and some 30 clinically diagnosed. A much larger group, tentatively diagnosed, is under observation. Definite diagnosis is based on laboratory evidence of infection such as the presence of agglutinins or a negative opsonocytophagic index with a positive skin reaction. The source of infection has been determined in many of the cases. Clinical diagnosis was made in the chronic cases, based upon suggestive symptoms extending over a period of years. A low grade fever was present in all of the cases and the source of infection was actually known in the majority. Past history of an acute illness of unknown or dubious origin aided in the diagnosis. In all of the cases, other likely illnesses were ruled out wherever possible. The duration of illness is an important factor in the chronic cases. In all instances, the patients have been under observation for several years or longer. The recurrence of symptoms, whether acute or chronic, is suggestive of brucellosis.

The most difficult type of brucellosis is the chronic, obscure manifestation. Physical examination does not show sufficient justification for the symptoms and the patient is usually branded as a neurotic or neurasthenic. Inasmuch as these patients have reasons for their complaints, the psychosomatic relationship must be considered. With the mental depression accompanying brucellosis, it is not unlikely for the patient to have a tendency toward neurosis. The clinical picture depends upon the tolerance of the individual to withstand the added discomforts of a chronic illness. The infection has been known to accentuate the symp-

toms of a menopausal syndrome and to aggravate a mild premenstrual tension.

In observing the disease in the cow and in the patient, I have noted sufficient evidence for possible diagnosis in individuals who have never sought medical attention. Knowing of a definite source of infection, the case of a white male, aged 36, was studied. He admitted a hyperpyrexia of five days' duration four years previous to examination. The patient had been hospitalized and studied without diagnosis. Since this acute illness, he further admitted having occasional periods of low grade fever with vague pains and fatigue which he did not consider justified medical attention. A search for possible *Brucella* infection was made with the following results. Agglutinins for *B. abortus* and *B. melitensis* were present in a dilution of 1-20. The opsonocytophagic index indicated doubtful immunity. The skin test showed a marked local reaction that persisted for six weeks and eventually terminated with a slough. Other investigators¹ have concluded that the infection may exist in a form so mild that the subject is unaware of the illness.

It is impossible to estimate the incidence of the disease. Foshay¹² states that surveys conducted in endemic areas indicate that approximately 10 per cent of these population groups have been invaded by *Brucella*. Many patients have probably made complete recovery following the acute illness. The subsequent finding of the disease in cattle occasionally throws light on a previously undiagnosed illness. In 1937, a white male, 27 years of age, was treated for a hyperpyrexia of two weeks' duration. There were no significant findings on physical examination. The leukocyte count was 5,500 with a normal differential. No plasmodia could be found. All agglutinations were negative on several occasions. The patient made an uneventful recovery without definite diagnosis. There have been no subsequent illnesses or suggestive symptoms. Several years later the family cow was found to have Bang's disease. Although this later discovery of a likely source of in-

fection does not constitute proof of diagnosis, it is of some significance. This case is not included in the series or considered as a *Brucella* infection. Drs. Angle and Algie¹³ "feel that the great majority of cases of acute undulant fever have gone unrecognized and untreated to complete recovery."

Case reports from many states indicate that the disease is widespread throughout the country. The situation undoubtedly varies in different sections depending upon the extent and duration of Bang's disease in animals. In those areas where the disease is less widespread one may expect more acute infections and consequently less difficulty in diagnosis. In the areas where diseased cattle are prevalent, brucellosis exists in a more chronic form. This probably accounts for the difference of opinion regarding diagnosis and treatment.

The medical history of this community is quite suggestive. Years ago this section was flooded with "supposed malaria." Quinine was a household article and atabrine was sold in the grocery stores. It is a significant fact, even noticed by the laity, that this so-called malaria has completely disappeared. Druggists report that both quinine and atabrine are now dead stock. Many of the *Brucella* patients give a history of having had malaria, of a duration of six weeks or in some cases as long as several months. The promiscuous use of quinine both by the physicians and the patients themselves casts a strong doubt on the accuracy of the diagnosis. The fact that the high fever has disappeared and that today we have a marked prevalence of obscure low grade fevers with symptoms suggests that the condition may have been brucellosis. Blood smears were not generally examined. Many of these patients have been checked for malaria but no plasmodia have been found. The occasional case of malaria noted has been of the tertian variety and has offered no therapeutic problem.

Space does not permit the detailed discussion of treatment. It is impossible to evaluate the efficiency of therapy when one considers that the acute phase is self-limit-

ing and may be of only several days' duration. The cases generally diagnosed are those showing positive agglutinations. The prognosis of the disease depends upon the individual's ability to establish sufficient antibodies to overcome the infection. Many accomplish this without the aid of specific therapy. Clinical observations indicate that the development of immunity varies more in brucellosis than in any other disease. The situation will not be understood nor accepted until more studies are made regarding the clinical immunology. In this section the use of stock vaccines has not proved satisfactory. It has been noted that those cases showing specific agglutinins respond better to vaccine therapy. This too must be considered as doubtful as these patients show indications of establishing immunity without the aid of a bacterin. Use of the sulfonamides has not been successful although supportive treatment is of some assistance.

CONCLUSIONS

1. The prevalence of brucellosis is a subject of controversy among physicians.
2. In endemic areas the disease is undoubtedly widespread in a chronic form.
3. The disease is best observed in the rural sections where the sources of infection are known.
4. The present laboratory procedures are inadequate for diagnosis in most cases and one should resort to clinical means.
5. Brucellosis is one of the most protean of diseases. An original diagnosis is rarely made.
6. Certain characteristics of obscure illnesses suggest the possibility of brucellosis.
7. The situation varies in different sections depending upon the extent and duration of the disease in animals.
8. A more thorough understanding of the clinical immunology is necessary.
9. Specific therapy is not satisfactory.

REFERENCES

1. Evans, Alice: Chronic brucellosis, *J. A. M. A.*, 103:665, 1934.
2. Smith, D. T., and Poston, Mary A.: Some unusual cases of brucella infection, *Trans. Clin. & Climatological Assoc.*, 1937.

3. Cody, C. C., Jr.: Brucellosis in otolaryngology, *Arch. Otolaryng.*, 23:441, 1936.
4. Oppenheimer, A., Deunis, E. W., and Badeen, M.: Involvement of the mastoid and granulopenia in brucella infection, *Pract. Oto-rhino-laryng.*, 1:305, 1938.
5. Simpson, Walter M.: Brucellosis; undulant fever, *Bull. New York Acad. Med.*, 17:592, 1941.
6. Purriel, P., Poggio, A. A., and Risso, R.: Brucellosis and tuberculosis, *Arch. Urog. de Med., Cir. y Especialidad*, 19:401, 1941, abstr. *J. A. M. A.*, 119:298, 1942.
7. Bogart, F. B.: Pulmonary changes in undulant fever, *South. Med. J.*, 29:1, 1936.
8. Lafferty, R. H., and Phillips, C. C.: Pulmonary changes in patients suffering from Malta fever, *South. Med. J.*, 30:595, 1937.
9. Harris, Harold: Brucellosis (Undulant Fever) Clinical and Subclinical, New York, Paul B. Hoeber, Inc., 1941. P. 286.
10. Huddleson, L. Forest: Brucellosis in Man and Animal, New York, The Commonwealth Fund, 1939. Pp. 339.
11. Calder, R. M.: Brucella, pasteurella tularensis, and proteus agglutinins in chronic brucellosis, *J. Bact.*, 41:593, 1941.
12. Foshay, Lee: The laboratory diagnosis of undulant fever, *Am. J. Clin. Path.*, 10:176, 1940.
13. Angle, Fred E., and Algie, William H.: The treatment of acute and chronic brucellosis, *J. Kansas Med. Soc.*, 41:233, 1940.
14. Singewald, M. L.: Brucellosis with positive blood cultures and negative allergic skin tests; two cases, *New York State J. M.*, 41:1766, 1941.

CLINICO-PATHOLOGIC CONFERENCE*

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

Dr. L. C. Chamberlain (Presiding): I am sure all of you are like all of us; we enjoy a break in regular routine of our staff meetings and the privilege of enjoying a good clinico-pathologic conference. We are going to have that sort of break tonight. This conference will be presented by Dr. Howard T. Karsner, Professor of Pathology, Western Reserve University School of Medicine, and Dr. Louis Hamman, Associate Professor of Clinical Medicine, Johns Hopkins School of Medicine, after the first case is read.

Dr. Chamberlain then read the first case history abstract which follows:

ABSTRACT OF CLINICAL HISTORY OF CASE 1

C. M., a white male, 48 years old, a garage mechanic, was admitted to Lakeside Hospital with the chief complaint of pus in the urine and dysuria. Family history is not contributory. Married for 28 years, his wife has borne four children and has had one miscarriage. In childhood, he had varicella, measles, mumps and pertussis, but denied having had gonorrhea, syphilis or other in-

*Read before the New Orleans Graduate Medical Assembly, New Orleans, March 15-18, 1943.

fectious disease at any time. He had been vigorous and well until 11 years ago, when after the extraction of several "abscessed" teeth, he was discovered to have diabetes.

The diabetes has been poorly controlled and he has had numerous boils. Four years ago he bumped his left foot and has had a large ulcer on the plantar surface ever since. At about the same time, he noticed the onset of a diarrhea which has gradually grown worse. He reported painful parasthesias of the foot at about that time and began to drink alcoholics in considerable quantity to control the pain. Three months before admission he began to lose weight and had two or three drenching night sweats per week. For two months before admission he had occasional fainting spells on assuming an upright position. A week before he entered he began to have pain and burning on urination and saw that his urine was cloudy and white. During the last month he lost 40 pounds in weight.

On admission to the hospital, where he stayed 87 days before his death, he was well developed but poorly nourished and edentulous. His temperature was 37.7° C., pulse 82, respirations 18 and blood pressure 100/75. Head and neck were normal save for Argyll-Robertson pupils and arteriosclerosis of the fundi of the eyes. The chest was emphysematous and there was costovertebral tenderness, more marked on the right; otherwise, chest and abdomen were not noteworthy. There was a small inflamed mass on the left thumb; the legs showed many pigmented scars and on the sole of the left foot was an ulcer, 10x5 cm. in area and 5 mm. deep. The gait was uncertain. Reflexes were normal except for absent knee and ankle jerks. Vibratory sense was diminished below the level of the pelvis and the legs and feet were anesthetic.

During the first two months the diabetes was readily controlled; thereafter there were periods of marked glucosuria. He had three to seven loose foamy fatty stools per day, not controlled by paregoric or other drugs; during the last week of life the diarrhea was described as terrific. His weight, which 11 years before admission was 250 pounds, dropped to 100 pounds at the end. The loss of weight in the hospital was only slowly reduced, with a diet of from about 2000 to 3000 calories supplemented by brewers' yeast, crude liver extract and pancreatic enzymes. About 10 days before death, large decubiti developed on buttocks and flanks.

The rectal temperature fluctuated between 36 and 38° C. until the forty-seventh day when for three days it reached a daily maximum of 40° C. This recurred on the sixty-third day and thereafter there were occasional elevations of about the same degree.

The Kline microprecipitation test for syphilis was negative. The urine was usually acid, with specific gravity of 1.007 to 1.018. It contained

albumin and often sugar. There were always many leukocytes, occasionally a few red blood cells, rare granular casts and many bacteria (colon bacilli by culture). There was anemia with counts at low as 2.7 million and 50 per cent hemoglobin. There was never a leukocytosis and the differential was normal. In the early days of his illness, the blood urea nitrogen was 24 to 26 mgm. per 100 cc. and the urea clearance was but 60 per cent of normal. A few days before death, the blood contained 8.7 mgm. calcium per 100 cc., 4.2 mgm. phosphorus, 12 units of phosphatase (5.5 to 6.3 units normal), 6 gms. protein with an albumin-globulin ratio of 1.01. The BUN was 110, creatinine 5.2, plasma cholesterol 50.5, glucose 628 and chlorides 80 milliequivalents. The duodenal contents were negative for amylase, lipase and trypsin. The 24 hour stools contained 14.05 gm. protein and 80 gm. fat, with an intake of 122 gm. protein, 80 gm. fat and 201 gm. carbohydrate. There were no parasites, ova or cysts.

Electrocardiogram was not abnormal. Roentgen studies showed normal stomach, increased motility of small intestine, negative excretory urograms. Films of the upper abdomen showed mottled and streaky areas of calcification to the right of the twelfth thoracic and first lumbar vertebrae, a position considered to be higher than would be expected for pancreatic calculi.

The patient became increasingly weak and died in respiratory failure.

Dr. Karsner: Before Dr. Hamman presents his discussion I wish to express my warmest appreciation to the committee that a man of Dr. Hamman's great distinction as a clinician should have been selected to be associated with me in this conference. I shall show photographs of this man clinically and then Dr. Hamman will proceed with his discussion of the points in the case and the diagnosis.

Slide—This is a photograph of the patient before he became ill. He was a big man physically, well nourished and heavily muscled. He weighed at that time 250 pounds.

Slide—This is a photograph of the x-ray film made during the later days of his illness. There are small shadows of considerable density in the upper part of the abdomen near the mid-line. The record presented to you indicated that our roentgen-

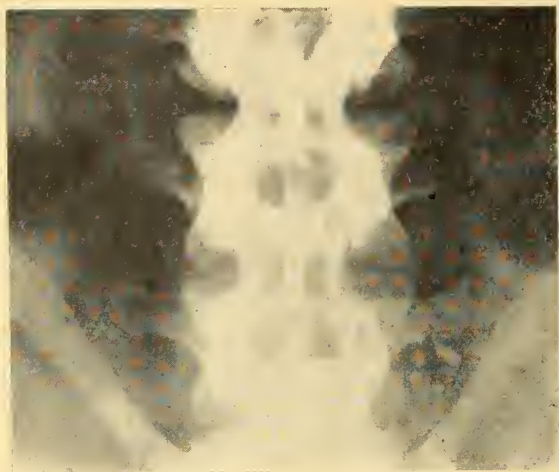


Fig. 1. Roentgenogram taken in life to show shadows of pancreatic calculi.

ologist thought these to be a little high in situation to be shadows of pancreatic calculi.*

Slide—This photograph was taken after death and shows the marked degree of emaciation.

Slide—This photograph shows the extensive decubiti and cellulitis of the buttocks and flanks.

Dr. Louis Hamman: I think you are all familiar with the nature of these exercises. Dr. Karsner selected the cases to be presented on this occasion and sent me the summary you have just heard read and of which most of you have copies. From the evidence contained in these records, we are asked to predict what was found at autopsy. The pathologist then will demonstrate what really was found.

There are certain features of the patient's illness which are clearly defined in the summary. In the first place, he had diabetes, a fact discovered ten years before death. Further, we are told that the diabetes never was satisfactorily controlled. Therefore, we are not surprised to read that

*Subsequent examination of the record of the case shows that this statement is not literally correct. The roentgenologist reported that the shadows were a little higher than is usually true of pancreatic calculi. He requested a subsequent examination but the condition of the patient did not warrant this.

in the course of years, certain complications arose which occur frequently in diabetes especially when the disease is poorly controlled. At first, he developed furuncles, later the characteristic symptoms of peripheral neuritis, finally a deep ulcer on the sole of the left foot which never healed.

About the furuncles, we need say little; they occur frequently in diabetes and their relation to the disease is well known. When the infections are deep-seated and widespread, our therapeutic routine goes awry and control of the diabetes may become difficult.

About the neurologic symptoms, there is much to be said for they are unusual from a number of standpoints. In the first place, the severity of the symptoms is remarkable. Then again the character of the symptoms is noteworthy for they are the distinctive symptoms of involvement of the posterior sensory columns of the spinal cord. Therefore the patient had not only peripheral neuritis but also what has been spoken of as diabetic pseudo-tabes. Whereas mild forms of neuritis occur often in diabetes, involvement of the spinal cord is seen only rarely. I am greatly interested in the statement that the patient had Argyll-Robertson pupils. In medical literature, there are reports of the occurrence of Argyll-Robertson pupils in alcoholic neuritis and diabetic neuritis. However, I have never observed them in these conditions. Guided solely by my experience, I would conclude that the Argyll-Robertson is distinctive of syphilitic infection of the central nervous system for I have seen it only in this disease. Therefore it would be a satisfaction were we able to recall the patient and, by appropriate tests, verify this observation. Since we cannot do this, we must look upon this case as one of the unusual instances in which the Argyll-Robertson pupil has occurred with diabetic neuritis.

As a sequel to the diabetic neuritis, the patient developed a deep ulcer on the sole of the foot, which never healed. This is a replica of the perforating ulcer of tabes.

It was about a year before death that an entirely new group of symptoms came to

the fore which progressed inexorably and finally led to the patient's death. The patient developed diarrhea, which grew steadily worse and during the last few weeks of life was described as terrific. The stools were large and full of fat. As a matter of fact, during the latter part of life, the patient discharged as much fat in the stools as was taken in by mouth and the cholesterol of the blood fell to a very low level. These observations demonstrate clearly that no fat was absorbed from the intestinal tract.

It is interesting to speculate upon the cause of this fatal diarrhea. Careful study of the stools, and of the digestive tract with the x-ray, exclude the possibility of an ulcerative lesion of the intestines being the cause. Such fatty diarrhea occurs in sprue, but none of the other symptoms of sprue were present in this patient. In children steatorrhea sometimes occurs when no satisfactory explanation for it can be found; rarely this condition is observed in adults. There is a very unusual disease of the intestinal wall which prevents the absorption of fat. However, none of these diseases seem to be at all a satisfactory explanation for the fatty diarrhea in the patient we are now discussing. Another explanation must be sought and this much more plausible explanation lies near at hand. It is well known that if the pancreatic ferments fail to reach the intestinal tract, digestion is seriously impaired and since the fats are not split, they appear in abundance in the stools. In the records, there is convincing evidence that the pancreas was diseased and its functions seriously disturbed. No pancreatic enzymes were found in the duodenal contents and the x-ray film demonstrated the presence of numerous stones in the pancreas. The roentgenologists were cautious and said that the stones were rather high for the pancreas. Nevertheless, I shall assume that they were in the pancreas for in other respects the picture is typical and the fact that there was impairment of pancreatic function has already been pointed out.

Finally, it must not be forgotten that when the patient entered the hospital, he complained chiefly of urinary symptoms. The urine was found to contain a large amount of pus and the colon bacillus grew in cultures. Therefore, he had a severe infection of the urinary tract, no doubt cystitis, ureteritis and pyelitis. Although there was no evidence of serious impairment of renal function, still, under the circumstances, it is reasonable to assume that the infection had invaded the kidneys and produced pyelonephritis.

I have said that the chief function of the clinician at these exercises is to discuss the clinical data in such a way as to lead finally to a prediction of the anatomic lesions that underlie the symptoms. Let us now go on to the prediction. From the fact that the patient had diabetes, what anatomic lesion would we conclude must be present? We all know that diabetes is due to a disturbance of the function of the islands of Langerhans. Therefore, we look at once for some structural change in these islands. It is important to bear in mind the fact that although the islands of Langerhans lie scattered throughout the pancreas, they are entirely independent of the secretory part of the gland which manufactures the digestive ferments. In animals when the pancreatic duct is tied, the secretory portion of the pancreas is destroyed and the gland shrivels into a small fibrous mass. However, the islands of Langerhans persist uninjured and diabetes does not occur. Analogous conditions are observed in man. I recall an instance published by Winternitz many years ago. An infant had severe diarrhea at birth with fatty stools and died soon after. At autopsy no pancreas was found but in microscopical sections, a narrow band of tissue containing a large number of islands of Langerhans was discovered. Owing to the absence of pancreatic ferments, the infant had fatty diarrhea and soon died but since the islands of Langerhans were preserved, he did not have diabetes.

It may seem singular, yet it is true, that there is no accurate correspondence be-

tween the degree of diabetes observed during life and the anatomic changes found in the islands of Langerhans after death. In a large series of cases, the pathologist is unable to divide the cases into those which during life showed the symptoms of severe diabetes and into those which during life showed the symptoms of mild diabetes. As a matter of fact, the pathologist, basing his conclusions solely on the results of anatomic studies, cannot in all instances with certainty decide that patients did have or did not have diabetes during life. The changes that are commonly found in the islands of Langerhans are degenerative changes in the cells often accompanied by sclerosis of the islands. On the basis of autopsy reports, it is often stated that the commonest lesion found is chronic pancreatitis. This statement is confusing because the diagnosis of chronic pancreatitis is not a satisfactory diagnosis. Fibrous tissue formation in the pancreas would not affect the islands of Langerhans unless in the course of extensive scarring, a large number of the islands were destroyed. Interference with the production of insulin not infrequently occurs as a result of destruction of a large number of islands, and this process no doubt explains the not infrequent occurrence of diabetes in carcinoma of the pancreas. In my experience, fibrosis of the pancreas, even though it may be very extensive, is not usually accompanied by the symptoms of diabetes though occasionally it may be. Therefore, I think it is difficult in advance to predict exactly what changes in the islands of Langerhans may have been found at autopsy in this case. It is possible that many of the islands may have been destroyed by fibrotic changes in the pancreas but I think it is also likely that the islands themselves will show evidence of degenerative changes in the cells with death of the cells and replacement by scar tissue.

I think we are on safer ground in predicting the changes that occurred in the pancreas to explain the absence of pancreatic ferments in the intestinal tract. I have already said that I shall accept the evidence as demonstrating the presence of nu-

merous stones in the pancreas. Unfortunately, we do not know why stones occur in the pancreas. I was very careful to see in advance what Dr. Karsner might have to say on this subject by looking up the matter in his textbook of pathology. He has only a brief paragraph on the subject in which he confesses to utter ignorance about the cause of pancreatic stones. Although we know nothing about the cause of pancreatic stones, we know something about the clinical manifestations that accompany pancreatic lithiasis. In the patient under consideration, we are altogether justified in assuming that one of the stones must have obstructed the common duct because this is the only explanation I can think of for the complete absence of pancreatic ferments in the intestinal tract. If this assumption is correct, then we may conclude further that the pancreas will show extreme scarring and will be much reduced in size. It would be an advantage if we could ascribe the disturbance due to the suppression of the secretory function of the gland and the disturbance due to changes in the islands of Langerhans to the same cause. One might assume that changes in the pancreas leading finally to the formation of stones, may have started many years before and that the disease of the pancreas, leading finally to the formation of stones, was also the cause of diabetes. Were we to attempt to do this, we would then be obliged to postulate the presence of some disease which had led to extensive fibrosis of the pancreas which had destroyed a large number of the islands. The subject of what is spoken of as chronic pancreatitis is an interesting one though not clearly defined either anatomically or clinically. There are, no doubt, many conditions to which scarring of the pancreas is secondary, just as many conditions precede the development of cirrhosis of the liver. There is a clinical picture not well known which seems clearly to be associated with extensive fibrosis of the pancreas. All the patients I have seen with this condition have been strongly alcoholic. The symptoms consist of severe attacks of pain in the upper abdomen which recur over many

years and lead gradually to digestive disturbance followed by emaciation. These patients are often operated upon for ulcer, for gall stones, and so on. These operations give no relief and often patients are operated upon a second and third time in the hope that release of adhesions may benefit them. If a bit of the pancreas is removed for examination at operation or if the patient finally dies and comes to autopsy, the examination of the pancreas shows the presence of extensive fibrosis with changes in the epithelium of the pancreatic ducts. The epithelium of the ducts becomes metaplastic and grows up in projections that finally occlude the ducts. When the ducts become occluded, the glandular structure which the duct drains becomes greatly distended and finally ruptures. When the distended gland ruptures, digestive ferments are poured out with the digestion of the surrounding tissues and fat necrosis. The attacks of pain are probably due to this mechanism. In the course of years, the scarring of the gland may become extensive. Occasionally the patients develop a mild form of diabetes but usually they do not. Rich and Duff in their studies directed to find an explanation for the occurrence of acute hemorrhagic pancreatitis, have described these changes in detail. I do not mean to imply that these changes are the cause of stone formation in the pancreas because observation certainly does not demonstrate such an association. However, when stones are present in the pancreas, extensive scarring of the gland usually occurs. Some cases of pancreatic lithiasis are accompanied by diabetes but most of them are not.

Finally, if we gather together the implications of this discussion, the clinical prediction of the anatomic findings would be as follows: (1) Pancreatic lithiasis with obstruction of the pancreatic duct, atrophy and scarring of the gland; (2) diabetes mellitus with degenerative changes in the islets of Langerhans; (3) peripheral neuritis with degeneration in the posterior columns of the spinal cord; and (4) cystitis, pyelitis and, in all probability, pyelonephritis.

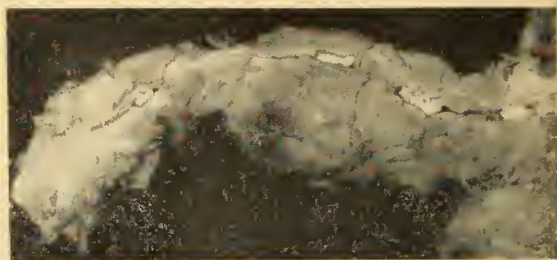
Dr. Karsner: Before presenting the diagnosis in this case, I insist that I be given an opportunity to defend myself and pathologists in general. I wish to say in all seriousness that pathologists have one great advantage over clinicians, in that the pathologists have direct access to the material under study. They do not have to determine the consolidation of the lung by indirect means, such as percussion and auscultation. They see the lung and feel it and get directly at it. They do not have to determine cardiac valvular lesions through a stethoscope and by other indirect means. They see and feel the valves. This matter of direct access is a great advantage to the pathologist. It does not give him the right to assume that he is superior in any way to his clinical colleagues. There are occasions when that attitude may have been adopted but rarely, if ever, is it justified. I have traveled about the country a great deal and have met doctors from various medical schools. I have known a good many Hopkins men and have a high respect for a great many of them, as I have for Dr. Hamman, but I also insist that in such a place back in the sticks as Western Reserve University, we have some fine clinicians and when they say "Argyll-Robertson pupils" they are Argyll-Robertson pupils* A pathologist is, generally speaking, the subject of attack by various clinical men, and that becomes especially evident if he, in a few weak years, may have written a book. I am gratified to find that Dr. Hamman agrees with one statement in my book. Perhaps that is the only one but I hope he may find others satisfactory.

Dr. Hamman has made reference to the excellent work of Rich and Duff on acute

*Subsequent examination of the record shows that the pupils were small but unequal, that they failed to react to light but did to accommodation, and that there was slight photophobia. The test with atropine was not applied. With this exception, the pupils correspond to the criteria given by Merritt and Moore: The Argyll-Robertson pupil: An anatomic-physiologic explanation of the phenomenon, with a survey of its occurrence in neurosyphilis, *Arch. Neurol. & Psychiat.*, 30:357, 1933.

pancreatic necrosis. With the tendency of certain pathologists to be caustic, I would say that the subject was not exhausted in Baltimore. There are numerous other studies and hypotheses. Neither from the physiologic nor the anatomic aspects have the course and pathogenesis of acute pancreatic necrosis been definitely proved. In passing, let me refer to the view that this lesion is not primarily inflammatory, and should not be called pancreatitis. There are true forms of acute diffuse pancreatitis but they are a clearly distinguishable lesion pathologically. Without further recrimination I shall read the anatomic diagnoses which have been so accurately predicted by Dr. Hamman. The diagnoses are as follows: Pancreatic lithiasis, with obstruction of main pancreatic duct, and fibrosis and atrophy of pancreas; fibrosis of islets of Langerhans consistent with the clinical diagnosis of diabetes mellitus; slight bronchopneumonia, bilateral; fibrosis and demyelination of peripheral nerves of lower extremities; focal demyelination of dorsal columns of spinal cord; acute intrahepatic cholangitis; acute hyperplasia of spleen; decubitus ulcers and cellulitis of back, sacrum and buttocks; multiple ulcers of legs; acute laryngitis; chronic cholecystitis with cholelithiasis; acute pyelonephritis with abscess formation, superimposed upon chronic pyelonephritis; acute thrombophlebitis of tributaries of renal veins; perinephric abscesses on left; acute and chronic ureteritis, bilateral; hypertrophy, dilatation, acute and chronic inflammation of urinary bladder, with cystitis cystica; healed non-deforming endocarditis of tricuspid, mitral and aortic valves; slight fibrosis of testis; melanosis of large intestine.

Slide—I have put on this chart the diagnosis, with particular reference to the principal systems involved. You will note involvement principally of pancreas, kidneys and central nervous system. There was pancreatic lithiasis, obstruction of the duct, fibrosis and atrophy, fibrosis and hyalinization of islets. The kidneys showed acute pyelonephritis and chronic pyelonephritis.



2. Gross photograph of pancreas to show calculi in main pancreatic duct. Most of what appears to be pancreas is fat and connective tissue.

The nervous system showed focal demyelination of dorsal columns of spinal cord and of peripheral nerves to lower extremities.

Slide—This is a photograph of the specimen of the pancreas taken postmortem and shows calculi in the main duct which are distributed widely along that duct. The structure that looks like pancreas is really largely fat and fibrous tissue with little parenchymal tissue remaining.

Slide—This is an x-ray photograph of the specimen to show the shadows produced by the calculi.

Slide—This is a photomicrograph of two islets of Langerhans surrounded by fibrous tissue, entirely devoid of parenchyma. Fibrosis and hyalinization are present in the islets. As Dr. Hamman has said, this change occurs in patients without diabetes but it is somewhat more frequent in those who are diabetic; it is not pathognomonic.

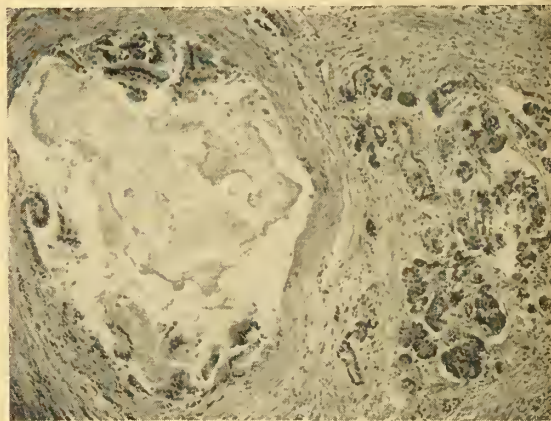


Fig. 3. Photomicrograph of pancreas to show dilatation of small duct and atrophy of parenchyma.

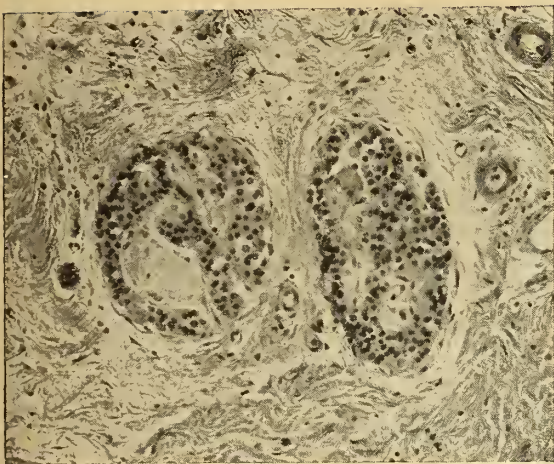


Fig. 4. Photomicrograph of pancreas to show fibrosis and hyalinization of islets of Langerhans.

Slide—This photomicrograph shows the dilated duct tributary to the grossly dilated main duct. The precipitate within it is amorphous and not in the form of the concretions often seen in the ducts of cystic fibrosis of the pancreas of childhood. The parenchyma is atrophic as would be expected in prolonged obstruction of pancreatic duct.



Fig. 5. Photomicrograph of section of spinal cord to show slight demyelination of posterior column.

Slide—This low power photomicrograph shows slight focal demyelination of the posterior columns of the spinal cord.

Slide—This photomicrograph shows fibrosis of the sciatic nerve. Special stains

by the Weigert-Pal method showed scattered foci of demyelination of both sciatics. This black and white picture shows a moderate fibrosis of the nerve.

Slide—This photomicrograph shows hyalinization of arterioles in the pancreas. Probably this hyalinization of arterioles is one of the anatomic manifestations of uremia. We observe it frequently in uremia and this patient had renal insufficiency because of his pyelonephritis.

As is often true, there was no anatomic explanation of the Argyll-Robertson pupils.

Pancreatic lithiasis occasionally occurs in patients with diabetes and it is often impossible to say which was primary. In this case, however, it seems evident that the diabetes which had been present for 11 years must have preceded the pancreatic lithiasis. I can see no reason for expecting that any change in the islets of Langerhans could have contributed to the development of the calculi.

Dr. Hamman accurately predicted the occurrence of pyelonephritis. In retrospect it seems possible that neither he nor our clinicians paid sufficient attention to the costovertebral tenderness.

The principal reason this case was selected was to draw attention to the disturbances in the nervous system that may accompany diabetes, a fact frequently overlooked. The presence of these manifestations does not necessarily mean syphilis or alcoholism. The literature on the subject is relatively scanty and there is no satisfactory explanation of the mechanisms which lead to these changes in the peripheral nerves and spinal cord.

Dr. Chamberlain read the abstract of the clinical history.

ABSTRACT OF CLINICAL HISTORY OF CASE 2

I. T., a white female, was admitted to City Hospital when she was 31 years old because of facial erysipelas. She was discharged cured three weeks later. At this time marked signs of disease of the central nervous system were discovered. From a sister, it was learned that the patient's father and all his brothers and sisters had died of "St. Vitus' dance" and the sister thought the patient's trouble

was of much the same order. In this generation there were four sisters, two perfectly well and one with epilepsy.

The patient had been wholly normal until she was 15 years old, when a coarse tremor of the hands was noticed. This gradually progressed to include other muscles; those of the trunk became weak, she lost control of her throat, developed difficulty in swallowing, lost the power of clear speech, her gait became unsteady and she walked with a wide base. Several years before her erysipelas she had been placed in a municipal infirmary because of inability to walk and to take care of herself. Indeed, she had to be secured when sitting up in a chair.

While convalescing from erysipelas, the records show that she was poorly nourished, asthenic and with virginal small breasts. The face was flaccid and smooth, the forehead wrinkled, the mouth open and drooling, and she looked much younger than her stated age. The pupils were normal in size and reactions, and the eyegrounds showed no changes. There were no pigment rings about the corneas. The tongue was tremorous and could not be fully protruded. All tendon reflexes were symmetrically and markedly hyperactive and there was sustained patellar clonus. Babinski and ankle reflexes were not demonstrable because of acquired clubbing of the feet. Cogwheel rigidity was excited by forcible extension of the extremities. The only sensory change was marked hyperesthesia of legs and feet. The spontaneous movements were a combination of static tremor and athetoid activity. Physical examination of thorax and abdomen was otherwise negative.

Generally she was euphoric, but during excitement, fearful and anxious. She appeared to understand questions and commands, but was limited in her response. When questioned vigorously or stimulated by physical contact, the tremor was exaggerated, she was unable to control herself at all, becoming rigid in all extremities, shaking violently and giving hoarse guttural cries.

After recovering from the erysipelas, her blood and urine were normal. No slit lamp studies or hepatic functional tests were made.

She returned to the infirmary where she gradually became worse and during the latter months of her life was bedridden and incapable of voluntary movements. She developed contractures of upper and lower extremities and toward the end decubiti over iliac crests, buttocks, trochanters of femurs, left ischial tuberosity and first metatarsal joint. She died of bronchopneumonia three years after her return to the infirmary, at the age of 34 years.

Dr. Karsner: (Motion picture). I show this motion picture, which is short, so that you may observe the facial grimaces, the

expression of fear, the athetoid movements of the extremities, and the periods of rigidity.

Slides—Three lantern slides were shown to illustrate still photographs of facial expression, weakness of the patient who had to be supported by a nurse, and rigidity of the extremities.

Dr. Hamman: This is the story of an interesting and unusual disease of the central nervous system. As possible causes of the symptoms, we may at once exclude nearly all of the common and familiar diseases of the brain. The duration and the character of the symptoms show clearly that they could not have been due to a brain tumor, to an inflammatory disease of the brain such as abscess or diffuse encephalitis nor to scarring of the brain from some acute lesion that had subsided, for the symptoms were steadily progressive showing a slow but continuous extension of the disease. Therefore, we may conclude at once that the patient must have had one of the slowly progressing degenerative diseases of the central nervous system. As a matter of fact, we can further decide confidently upon the location of this degenerative disease. The lesions did not involve the pyramidal tract or any of the sensory tracts. The symptoms consisted chiefly of tremor with steadily increasing spasticity of the muscles. The portion of the brain that is affected in diseases characterized by tremor and muscular rigidity is the mid-brain and more specifically the corpus striatum which comprises the caudate nucleus and the lenticular nucleus. It is now well established that this is the portion of the brain that is affected in Parkinson's disease and also in the Parkinsonian syndrome that follows encephalitis. In this particular instance, we can immediately exclude Parkinson's disease or as it is commonly called, paralysis agitans. This is a disease of late life and in the patient we are now considering, symptoms began when she was only 15 years of age. Nor are there any valid grounds for regarding the clinical manifestations as secondary to encephalitis. There is no history of an

acute illness preceding the onset of the symptoms; they came on very insidiously and gradually progressed; and the remarkable familial history cannot be disregarded. The two well-known diseases that often run a chronic course and are due to degenerative changes in the corpus striatum are Huntington's chorea and Wilson's disease. It seems to me that in this instance, the diagnosis lies between these two conditions and I think the chances favor Wilson's disease.

Huntington's chorea is an uncommon disease and yet one that is better known in this country than elsewhere. It is an inherited disease and apparently all of the cases that have been described may be traced to the descendants of about seven or eight ancestors. Huntington's chorea usually begins late in life and it begins as the name implies with incoordination of movements somewhat resembling the jerking movements of chorea. The disease may last many years and is usually associated with obvious mental deterioration. The family history in this case suggests an inherited disease if we conclude that the disease which occurred in so many members of the father's family was the same disease from which the patient suffered. If this interpretation is correct, it would be a point in favor of Huntington's chorea.

Wilson's disease, commonly spoken of as hepatolenticular degeneration, was first described by Wilson in 1912. It too is a rare disease but as we learn more about its clinical manifestations, more and more cases are being discovered. We know nothing about the cause of Wilson's disease. It seems not to be an inherited form of degeneration. It does occur in families but always in members of one family and not in ancestors further removed than the father and mother. When it occurs in this familial form, it is thought to be due not to inheritance but to some common cause to which the family living together is subjected. Apparently, it does not pass from one generation to another. Wilson's disease occurs at an earlier period of life and it is not uncommon in the teens. As a rule,

the disease runs a much more rapid course than does Huntington's chorea. There are acute forms of not more than a few months' duration. The average duration of life after the onset of the disease is about four or five years. A few cases have been reported living from ten to 30 years. The characteristic symptoms at onset are tremor and not choreiform movements as in the case of Huntington's chorea. The striking peculiarity of Wilson's disease is that there is always necrosis of the liver followed by cirrhosis of the liver as well as degenerative changes in the corpus striatum. Clinically, the patients often show only nervous symptoms and cirrhosis of the liver is not discovered until the post-mortem examination is made. On the other hand, some cases show only the manifestations of cirrhosis of the liver and nervous symptoms develop only late in the disease or not at all. Certain pigmentary changes in the eyes are thought to be characteristic of Wilson's disease and if these changes are found it is safe to make the diagnosis no matter what other symptoms may be present. However, these pigmentary changes are not always present and in their absence the diagnosis of Wilson's disease may be justified by consideration of the other manifestations. It is stated in the history of this patient that these pigmentary changes in the cornea, usually spoken of as Fleischer bodies, were not found but the note is added: No slit lamp studies were made. From my own experience, I can testify that it is not easy to see the characteristic golden-brown, granular pigment on the posterior surface of the cornea. In one patient, the ophthalmologist took pains to demonstrate them to me and yet I could not be sure that I could even then identify them. In this patient, there was no evidence of disease of the liver and yet, as I have said, the symptoms of cirrhosis of the liver may be entirely absent clinically and the disease be discovered only at autopsy. I lay great emphasis upon the fact that in describing the earliest symptoms of this nervous disorder, it is said that there was a coarse tremor of the hands.

In a word, most of the clinical manifestations seem to me to fit together better with the diagnosis of Wilson's disease than with the diagnosis of Huntington's chorea. The age of onset of the disease and the character of the earliest symptoms are certainly characteristic of Wilson's disease. As far as I know, Huntington's chorea never begins as early as 15 years. I must confess that the evidence pointing to a hereditary factor is in favor of Huntington's chorea. Therefore, the predicted anatomic diagnosis is degenerative changes in the corpus striatum and cirrhosis of the liver.

Dr. Karsner: Dr. Hamman made jocose reference to the insertion in the clinical history of the lack of performance of tests for hepatic function and the lack of examination by means of the slit lamp for the Fleischer rings. Without any claim to being a teacher, I have been employed in that capacity for over 30 years. Thus, I have given numerous examinations in the various schools with which I have been connected and also gave the examinations in the National Board of Medical Examiners for 12 years. I have conducted innumerable clinico-pathologic conferences in the hospitals with which I have been connected. I have not at any time in examinations or in clinico-pathologic conferences resorted to trickery. Trick questions in examinations are to be abhorred. Tricks in clinico-pathologic conferences are too easily exposed. The history which you have heard was that given at the clinico-pathologic conference on this case at Cleveland City Hospital, and was prepared by the clinical men in charge of the patient. The suggestion that slit-lamp studies be made was never followed out. I doubt very much that any study of hepatic function would have been valuable because of the fact that only when the liver is destroyed to a great extent are these tests to be thought of as dependable. Of course the absence of the Fleischer rings would not be a certain indication against the diagnosis of Wilson's disease. The neuropsychiatrists who had the opportunity of observing this patient made identical-

ly the same diagnosis as Dr. Hamman, which as you will see was incorrect.

Figure 6 below is made up from material given me only two days before this conference. You see the diagnosis at the top of the chart—namely, Huntington's chorea. Disease of the central nervous system has occurred in three generations. It is not to be asserted with positive as-

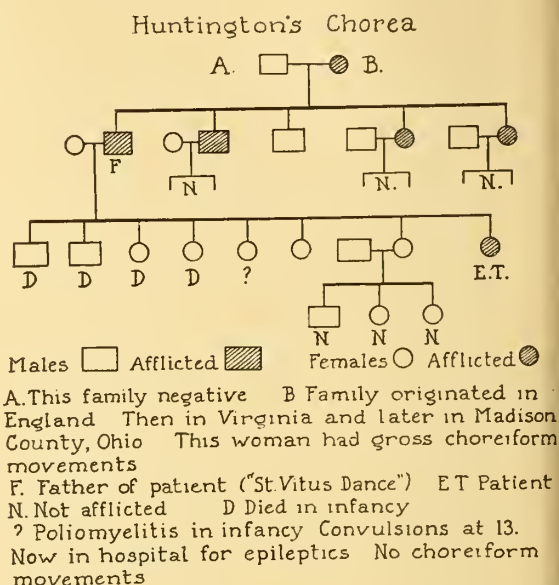


Fig. 6. Chart of family history of patient, I. T. Prepared on basis of information collected by Dr. Edward Zucker of Cleveland City Hospital.

surance that these were all cases of Huntington's chorea, but as far as can be learned, the symptoms and signs were much the same as presented by our patient. The grandfather showed no disease but the grandmother was a victim of a comparable disease. In the next generation, which included the father of our patient, it is seen that one of his brothers and two of his sisters had comparable disease and that only one other member of that generation, a brother, escaped. In the patient's generation there were eight children, two boys and six girls. Two of her brothers and two of her sisters died in childhood. One of her sisters is married and has three children living and well. One other sister is normal, another sister is evidently the victim of epilepsy. The family of the grandmoth-



Fig. 7. Photograph of cross section of brain to show almost complete disappearance of caudate nucleus. The brain is small and the ventricles slightly dilated.

er originated in England but detailed story is not known. They migrated to Virginia and thence to Ohio.

Slide—These Kodachrome photographs show a cross section of normal brain as contrasted with a cross section of the patient's brain. The patient's brain is much smaller than the normal adult brain. The ventricles are enlarged and there was a good deal of fluid in the leptomeninges. You will see that the caudate nucleus shows a yellow discoloration in that small portion of it which is left. It is markedly reduced in size as compared with the caudate nucleus in the normal brain.

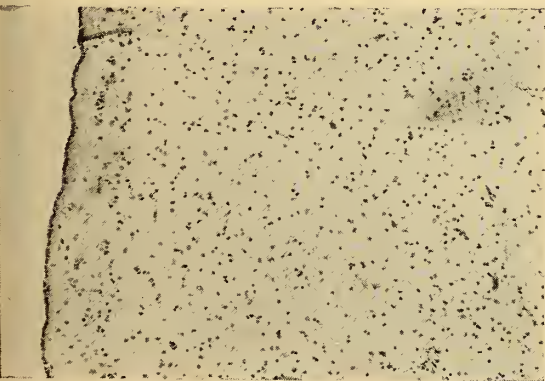


Fig. 8. Photomicrograph of caudate nucleus to show practically complete absence of ganglion cells.

Slide—This is another gross section to show the practically complete disappearance of the caudate nucleus and also illustrates the reduction in size of the putamen.

Slide—Here is another cross section of the brain to show essentially the same appearance.



Fig. 9. Photograph of cross section of two brains at same level. At the left is the brain of another case of Huntington's chorea, with loss of caudate nucleus. Ventricles only slightly dilated and brain not reduced in size. At right is a normal brain for comparison.

Slide—In this photograph the substantia nigra is present and not altered.

Slide—This is a photomicrograph of the caudate nucleus to show practically complete disappearance of all the ganglion cells.

Slide—This is the gross photograph of the brain in another case. The brain is not materially reduced in size but the ventricles are somewhat enlarged. On the same slide for comparison is a section at the same level of a normal brain. The reduction in size of the caudate nucleus is striking.

We have excluded Parkinson's disease because in that condition the destruction of cells is principally the large cells of the paleostriatum and one of the main features is the involvement of the substantia nigra. Neither of these conditions is found in this case. In Wilson's disease there are similar degenerations of caudate nucleus and putamen, but again there are particular features in the frequent presence grossly of small cavities in these ganglia, and microscopically in the appearance of the large glia cells referred to as Alzheimer cells. Huntington's chorea affects the small cells of the neostriatum especially in the caudate nucleus, and the involvement of the

putamen is less striking. Grossly, the yellow color of the affected ganglia is usually found. Furthermore, atrophy of the cerebrum is much more likely to be observed in Huntington's chorea than in the other diseases although it may not be marked.

The patient had a general reduction in size of all organs of the body and that was true of the liver. Nevertheless there was nothing either grossly or microscopically to suggest the presence of cirrhosis of the liver. Sections of the eyes show no indication of the pigment observed in the Fleischer rings. The patients originally observed by Huntington came from a family in two small towns in England. It has been thought that practically all cases of Huntington's chorea are derived from this family. It is now doubtful that this is true because there are cases in this country which show no direct connection with Huntington's families. Furthermore, a considerable literature on the subject has been built up on the basis of cases observed in Sweden and on the continent. This is not to be interpreted as meaning that the disease, or the conditions which lead to its development, are not hereditary. They evidently are, as would be indicated in the history of this particular patient.

Of some interest in this case is the study given it by the patient's sister, a young woman not medically trained but widely read in the subject of these degenerative lesions of the basal ganglia. After her study she arrived at the conclusion that this was Friedreich's ataxia but as Dr. Hamman so ably pointed out, it is not a disease of the pyramidal tracts. The sister was of the opinion that the girl did not have Huntington's chorea because she thought there was no mental deterioration. That of course is prejudiced evidence. The motion picture and the entire story give plain indication of mental deterioration.

We think that we have demonstrated the diagnosis of Huntington's chorea in this case and I believe that when Dr. Hamman enters the discussion further, he will accept this view.

The reason for presenting this case in this conference was to draw attention to the group of diseases of the central nervous system which affect the basal ganglia especially. It is gratifying to all of us, I am sure, that it provoked the scholarly discussion given us by Dr. Hamman.

Dr. Hamman: Of course, after seeing this demonstration, no one can doubt that the real diagnosis is Huntington's chorea. The pathologist always has the last word in diagnosis and usually the final word. Dr. Karsner, if in my remarks, I inadvertently said anything that might have led to the impression that I implied that you were putting tricks over on us, I am deeply embarrassed and wish to offer my abject apology.

Dr. Karsner: It is generally stated that Huntington's chorea is first manifest in the fourth decade of life, but this is not invariably true. Certainly this case was unusual in beginning in adolescence. The age of onset played a considerable part in the clinical diagnosis in our hospital.

HISTORY OF AVIATION MEDICINE*

LEONARD K. KNAPP
NEW ORLEANS

I chose this subject because I think today we, as doctors, should all have a certain interest in aviation medicine and its special problems. I am sure that all the youth of today are interested in aviation, and the individual is few and far between who will not walk off the sidewalk while stretching his neck following a P-38, or look out of the window as a "flying fortress" lumbers along—it gives us all a thrill of one kind or another. We all wonder what the pilot feels, we wonder what it feels like to go tearing along at that terrific rate, we think of it in terms of daring, and in terms of dying. But did you ever stop to think of the physical condition, and the mental alertness of the interceptor pilot who spots enemy bombers 10 miles away? He has to

*Read before The History of Medicine Society, Tulane University, February, 1943.

plan his attack in less than a minute. Or the torpedo bomber who falls from 10,000 to 2500 feet or less in 15 seconds, aim his plane, and release the bomb; this man cannot be bothered with his ears popping. These men must be in top condition all the time and it is the duty of the flight surgeon to keep them that way. Incidentally, this term, flight surgeon, originated unofficially in England. As the story goes, a young American medical officer on arriving in that country was questioned as to whether he had a specialty. He replied, "flight surgeon." This mystified the officer, but it was finally decided that he should be taken to an airfield and given the opportunity to prove that he could fly. Fortunately he had learned to fly, and passed the test. It was not said whether he was given a practical examination in surgery.

The first official use of the term "flight surgeon" appeared in a memorandum to the Chief Signal Officer, U. S. Army, dated April 12, 1918, in which the term was officially given to those medical officers who have as their duty "Care of the Flier."

These problems of flight may seem far distant to us right now, but in the future everyone will be flying, and every doctor is going to have to hear and treat their problems. Maybe not every doctor, because I think that this will develop into another specialty for men in civil practice—it already is a specialty in army and navy medicine, and a relatively few doctors working in commercial aviation.

To get back where all this started is another matter. I find that 120 years before the airplane was invented in 1903 the first medical studies or experiments were made on flying. It was about this time that the first hot air balloons were being made, and after small ones ascended, larger ones were made and the people wondered whether it would be safe for a human. To test this they sent the first animals ever to fly—a chicken, a duck, and a sheep. These descended with no ill effects, and it was thought safe for a human. It was decided first to try a criminal; if he came back alive he was to have his freedom. It hap-

pened, however, a young, daring French nobleman named Pilatre de Rozier, volunteered, probably after many caustic and taunting remarks from a French mademoiselle who hoped to get rid of him in this manner. At any rate she was unlucky because he came back after an uneventful ascent on October 15, 1783. About two months later this same de Rozier noticed pain in his ears on another ascent. This is historic as the first reported ill-effects of flight, and is still important today.

Three years later, in 1786, the first reference to lack of oxygen appeared in the literature. In that year a technical "Handbook of Aeronautics" contained the following statements, speaking of an ascent: "The spirits are raised by the purity of the air, and rest in a cheerful composure. In an ascent all worries and disturbances disappear as if by magic due to the change from hot, putrid, and impure air to cool, pure air impregnated with the invigorating aerial acid." Today there is some dispute about this "aerial acid" theory, a few of the J. Kierans and F. P. Adams think it might have something to do with a mild oxygen lack.

In 1862 a couple of men, Glaisher and Coxwell by name, ascended to the remarkable height of 29,000 feet. Glaisher noticed he could not see well, and his hearing was fading, next his legs and arms became paralyzed. He had the presence of mind to grasp the valve rope in his teeth and as they descended his senses gradually returned to normal. This gives the first picture of severe oxygen lack due to altitude.

The first physician to devote his entire time to the study of the medical problems of aviation was Paul Bert, of France, who after many years of study, published in 1878 a book of some 1200 pages describing his findings. He was the first to realize the true cause of the changes with which balloonists were troubled. Soon after this Tissantier, a famed French meteorologist, Croci, and Sevel became interested in balloon ascents; they went to Bert for advice on the necessary precautions that should be taken. He advised them to take some oxy-

gen with them, and devised containers for it so that it could be used. In this advice he made just one mistake—he told them not to use the oxygen until they felt the need of it, because their supply was limited. This mistake proved to be a fatal one, because man's memory and judgment are defective when working under this oxygen deficiency. As a result, the oxygen was never used. This same story accounts for many deaths even today. Tissandier's classic description of the ascent follows:

"I now come to the fateful moments when we were overcome by the terrible action of reduced pressure. At 22,900 feet torpor seized me. I wrote nevertheless—though I have no clear recollection of writing. We were rising. Croci is panting. Sevel shuts his eyes. Croci also shuts his eyes . . . At 24,600 feet the torpor that overcomes one is extraordinary. Body and mind become feebler . . . There is no suffering. On the contrary one feels an inward joy. There is no thought of the danger of one's position; one rises and is glad to be rising. I soon felt myself so weak that I could not even turn my head to look at my companions. I wished to call out that we were now at 26,000 feet, but my tongue was paralyzed. All at once I shut my eyes and fell down powerless, and lost all further memory." When the balloon descended, Croci and Sevel were dead.

After this incident interest in the medical side of flying waned until after the Wright brothers invented the airplane in 1903. Even for several years after that the interest in flying was not high in this country and the Wrights had to take their invention to Europe to get governments interested in the addition of the airplane to their armed forces. One of the first of these was Germany. With the acceptance of the airplane as a military weapon, problems for the medical men began to multiply.

In the first place pilot selection became the most important job of the physician, and still remains so today. Again Germany led all others in setting up pilot standards. In 1915 a special medical service composed of the finest specialists in the country served

in the German Air Force. The boys of that day who were training for the air force probably looked upon the physical much as most boys and pilots do today—as something that one had to pass—if they could conceal some minor defect that would throw them out, if they could memorize the eye charts, that was all to their advantage. That this was not the case was definitely proved by the English Air Force during this same period. At the start of World War I, the English had no pilot selection, in fact the only men they took for the air force were those unsuited for duty at the front, or those worn out by duties in the front lines who were sent back for a rest. This proved disastrous. At the end of the first year of war it was found that out of every 100 pilots killed, 90 died as a result of defect in the pilot, eight died from defective machines, and two died from enemy action. Besides this, 50 per cent of the flying Tommies developed nervous breakdowns or psychosis of some type. Can you imagine what shape our air force would be in today if a policy of selection such as this were allowed? At any rate, England quickly recognized her mistake. A medical research laboratory was established, and pilot selection began to be carefully controlled on the basis of findings by this laboratory. As a result, the 90 per cent of deaths due to defective pilots dropped to 20 per cent in two years, and to 12 per cent in three years.

I wish to digress here for a moment, because I think this authority on the part of a doctor of saying who is to fly, and who is not to fly is something that needs examining. If ever a doctor needed to practice the art of medicine that we hear so much about, it is the flight surgeon. He stands in rather a unique position, I think. He must tell the Army pilot he is now a liability, not an asset, that his flying is dangerous to himself and to his colleagues; he must tell the beginner that he is mentally not suited for pilot material. In the one case he is taking the very bread and butter from a pilot's mouth, in the other he may be crushing a life long ambition. These situa-

tions tend to make the flight surgeon at least a feared, if not a hated man. He must have the personality and the push to make himself understood and liked by the men—he must be their medical advisor so that they will not try to hold any secrets from him. If any of you are examining pilots in the future, I think this relationship is a very important one to remember.

To get back to the story, we now come to the real development of aviation medicine as it was brought about in the United States. In July 1914 Colonel Samuel Reber reported to the Surgeon General's Office that there were several young officers desiring to enter the aviation section of the Army, and it would be necessary to give them physical examinations. On July 30, 1914, the examinations were made, the first officers being examined were Second Lieutenants F. J. Gerstner, 10th Cavalry, and F. T. Armstrong, C. A. C. Immediately after this the Army drew up a set of standard regulations for the physical requirements. These were original because there were no previous ones to base them on, and none could be obtained from abroad. At any rate the results of these regulations were a little surprising, because after having had them in effect for six weeks no applicant had been able to pass them. The standards were revised and the requirements lowered. It is interesting to note that up to this time no civilian aviators had ever been physically examined.

Because the United States had well in mind the lesson that England had learned in selecting pilots, on October 18, 1917 a "Medical Research Board" was established. This board had broad powers designated, such as "to investigate all conditions which affected the efficiency of pilots, and to act as a 'Standing Medical Board' to consider all matters pertaining to their physical and mental fitness." This board began to function immediately—in December, 1917, two members, General T. C. Lyster and Major Isaac Jones went to Europe to investigate the work carried on by the Allies. They returned with much valuable information. A research laboratory was set up at Min-

eoia, Long Island. After several delays and handicaps were overcome, it was opened on January 19, 1918. The first experiments conducted here were those dealing with oxygen lack in high altitude flying. It was found that 16 per cent of normals begin to react to oxygen lack at 10,000 feet, and to lose efficiency. In connection with this is the interesting story told on one Lt. M. He was flying with his instructor, who noticed that at 10,000 feet the Lt's head dropped to the side of the cockpit as in a faint. The plane went into a spin and fell to the ground. The pilot was seemingly dead, having a fracture of the frontal bone and a piece of bone over the frontal sinus driven into the brain. The body was placed in the morgue. That night the morgue keeper's curiosity got the better of him. To see how deep the wound was he poked a finger into it, whereupon Lt. M. sat up and swore at the keeper. The pilot recovered, and it was later found that he did faint at an altitude of between 10,000 and 15,000 feet.

On March 8, 1918, Captain Schneider and Captain Whitney made an interesting experiment upon themselves. They used the low pressure tank, and went to the altitude of 34,000 feet, using oxygen. They found that there were no unpleasant sensations except for the painful swelling of the abdomen due to the gases in the intestine. This is still a problem in flying today. It is solved by breathing pure oxygen before going up, by eating low-gas producing foods, and by taking small tablets of charcoal.

The work of the board at the laboratory in Mineola was rapidly increased in amount and importance. By June 1918, less than a year after it was organized, the laboratory space had increased three-fold over the original plan, and a school had been established for the training of flight surgeons. Also aviation medicine had been divided into three phases—the selection of the flier, the careful testing and classification of the flier, and the care of the flier.

The practical application of aviation medicine proved to be of so much value in

the United States, that in early August 1918, in response to a cable from General Pershing, a group of 34 officers and 15 enlisted men (trained in laboratory methods) embarked for service in the A. E. F. This group set up the Medical Research Board in France, and on investigation found conditions at the front and the training centers almost deplorable. Morale was at a low ebb, physical condition was not thought of, and fatalities were common due to pilot error, the pilots had a fatalistic attitude of mind, they were stale, it was impossible for them to get over two days' leave. This Board corrected all of these conditions possible, and the improvement in number of flying hours was increased by 50 per cent with the fatality rate cut almost to nothing.

It is interesting to note that on September 17, 1918, Major Hampton was appointed the first official Flight Surgeon in the A. E. F.

After the war, the pace of experimentation and study lessened somewhat for a few years, but never stopped. The Army school and laboratory were moved to Texas and work continued. There tests to determine physical efficiency, reaction time, psychologic stability, and new methods of training flight surgeons were all given attention with numerous other problems. The Schneider Index was developed and perfected by Captain E. C. Schneider. It indicates the cardiovascular efficiency, and is made up of six factors: (1) Pulse rate reclining; (2) pulse rate standing; (3) difference between these; (4) effect of standard exercise on these rates; (5) time of return to standing rate, following exercise, and (6) difference between reclining and standing systolic blood pressure. This test is still used by the Army, and, although it is not perfect in every case, it is a fair judge for most cases.

The personality study was developed as a method of determining the psychologic stability of the pilot candidates. Its value is proved by the following statistics from

the Naval Air Station at Pensacola. Before entrance, 1305 continuous cases were examined by the flight surgeon and divided into two categories: (1) good aviation material and (2) poor aviation material. This entire group was allowed to enter, that is, both categories. Of these 1305 cases, 49 per cent qualified and 51 per cent failed. When the results were examined, it was found that of the 1305 cases only 479 were originally selected as good aviation material. Of this group 77.6 per cent completed the course successfully, and only 22.4 per cent failed. Of the remaining 825 individuals placed in the "poor" class, only 32.5 per cent completed the course, 67.5 per cent being rejected before finishing the course. This shows that the present tests (up to 1935) are not 100 per cent accurate, but that they do give an improvement of 50 per cent in the tests previously used as to the number of pilots finishing the course. Another interesting study showed that the pilots in the "good" class had an accident rate of 0.2 per cent, while those in the "poor" class had an accident rate of 0.65 per cent, or over three times as high.

There have been numerous other problems and advancements made in aviation medicine—just to mention a few, "black-outs", carbon monoxide excess in cabins and cockpits, aeroneurosis, aeroembolism, ear "cracking", pressure cabins, and pressure suits. One interesting finding is that an individual's body fluids "boil" at 63,000 feet due to the tremendously reduced pressure.

All of these problems have been studied and most all of them drawn to a successful conclusion by the flight surgeons. As planes develop it will be the duty of these men to design them so that they will be safe for the man behind the wheel, or to make some apparatus for that man so that his body can safely meet the new and abnormal stresses and strains for which it is called upon. This field certainly has a bright future. I am certain that when this present conflict is over and we can get the

true story of the part played by the flight surgeons, we will be amazed at their new accomplishments.

BIBLIOGRAPHY

- Grow, M. C., and Armstrong, H. G.: *Fit to Fly*, D. Appleton-Century Co., New York, 1941.
 Iverson, L.: Recent progress in aviation medicine, *J. Florida M. A.*, 21:279, 1934-35.
 Sitt, E. R.: Trends in medical aviation, *California & West. M.*, 30:377, 1929.

GLAUCOMA AND THE GENERAL PRACTITIONER*

RALPH I. LLOYD, M. D.
 BROOKLYN, N. Y.

The most common cause of blindness in adults is cataract. This disease cannot go far without attracting the attention of the patient. Operation is successful in more than 90 per cent of the cases. Delay in the operation is at the expense of the patient's comfort and ability to read.

The next most common cause of loss of vision in adults is glaucoma, which may reach an advanced state without the patient's knowledge because his ability to read is affected late in the disease, the onset is insidious and progress of the disease is so gradual. It is not unusual for the patient to lose the vision of one eye entirely and the second to be seriously impaired before the patient seeks relief. Treatment of glaucoma is a serious matter at any stage of the disease and delay is fatal because of complications due to weakened blood vessels; a part, if not the cause of the disease. It is imperative then that the disease be detected early when the results of treatment are more satisfactory. The one important symptom of the disease is increase of intra-ocular pressure caused by defective drainage of the eye. The aqueous is secreted by the ciliary processes, passes through the pupil into the anterior chamber to its angle where it filters through the spaces of Fontana into the canal of Schlemm which is the portal to the venous side of the circuit. In older persons, this process

is hampered by changes in the minutest capillaries, the fluid accumulates and intra-ocular pressure is raised. This increase in internal pressure is intermittent at first but gradually becomes constant. From incipency to an established state may take several years. The outer coats of the eyeball are unyielding and the nerve elements upon which we depend for vision, are under abnormal internal pressure. The weakest part of the scleral coat is the cribriform lamina through which the optic nerve fibers enter the eye and this small area gradually gives way and cupping of the optic nerve head can be seen with the ophthalmoscope. When this cupping is developed, the blood vessels and nerve fibers streaming out from the nerve head into the retina are pinched as they cross the sharp unyielding edge of the cupped disc. As the temporal margin of the disc carries all of the fibers found on the nasal half plus the large papillo-macular bundle, the fibers supplying the superior quadrant of the temporal retina are crowded together in a small sector of the disc margin above (fig. 1) and those supplying the lower quadrant are similarly crowded and located below. In order to pass through this small sector, each of these two groups is arranged in layers which exposes them to greater pressure than the other fiber groups which have larger sec-

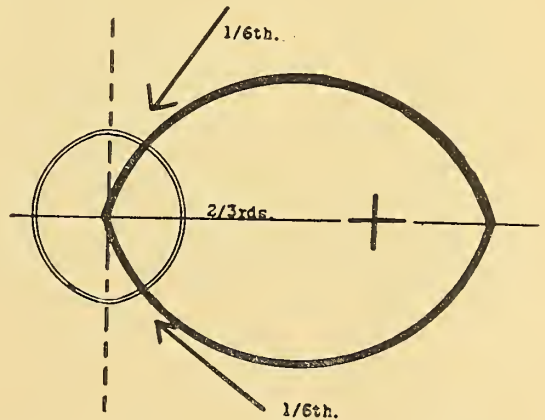


Fig. 1: The papillo-macular bundle occupies two-thirds of the temporal half of the disc margin, crowding the fibers supplying the superior and inferior retinal quadrants into narrow sectors at the top and bottom of the respective disc segment.

*Read before the New Orleans Graduate Medical Assembly, New Orleans, March 15-18, 1943

tors of the disc margin to accommodate their exit into the retina.

The increased internal pressure affects the blood and nerve supply causing progressive loss of nerve function as expressed in visual acuity. The loss is not evenly distributed as one might expect but concerns first the condensed superior temporal bundle arching from the disc around the macular area like a comet, with the head at the optic disc and the tail resting on the horizontal meridian from 20° to the periphery in the fully developed stage. This loss usually occurs (fig. 2) above the horizontal meridian first, but by the time it is well developed, the same process begins from the lower margin of the blind spot

so that eventually the central macular area is a functioning island of about twenty degrees horizontally and somewhat less vertically. This small central area carries on very well for a surprisingly long time. The patient can read the paper very well but losing more and more of the peripheral field may bump into objects at the side as he walks the street, or may lose the upper part of the newspaper as he reads. This small central area loses its efficiency finally and the eye may become blind rather suddenly, which is usually attributed to some trivial event antedating the tragedy. This confusion of post hoc with propter hoc is not exclusive to the laity. If one eye is affected well ahead of the other, as

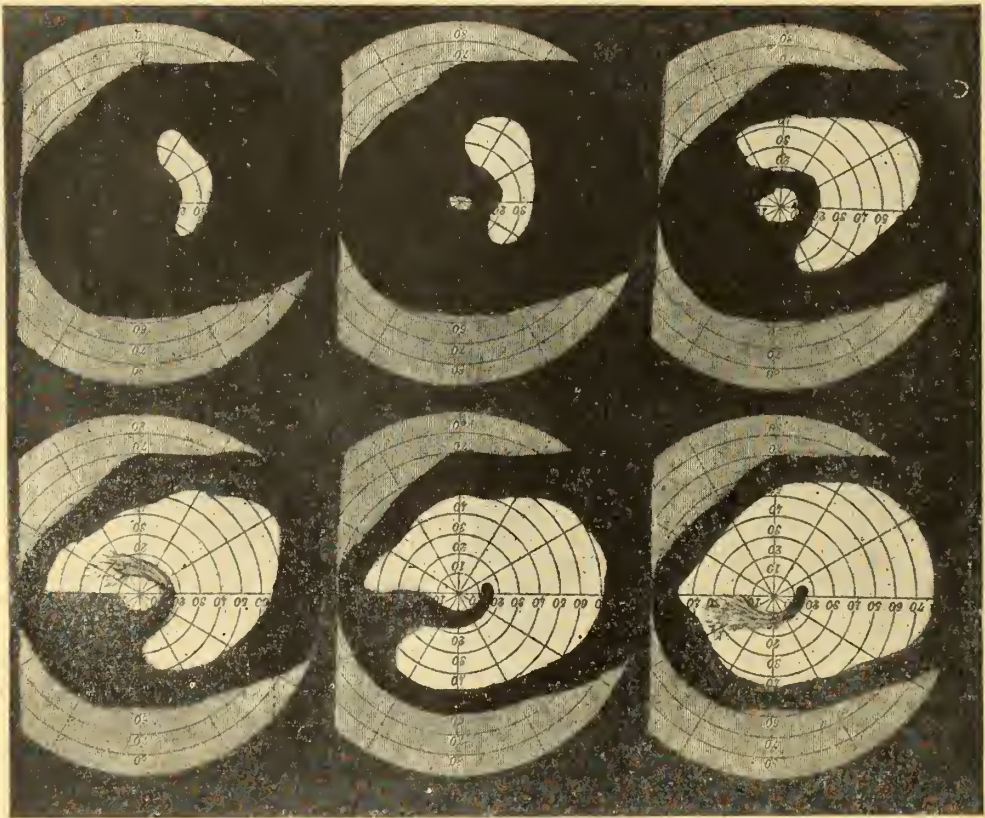


Fig. 2: Autobiography of Glaucoma. No. 1. The first loss is in the form of a comet arching above the macular oval, with the head at the blind spot and the tail spreading out nasally. No. 2. The tail now rests upon the horizontal meridian and has broken through to the periphery. No. 3. The defect above the horizontal meridian is a triangular defect nasally and is known as Roenne's nasal step. The comet defect is beginning below. No. 4. The inferior defect has joined with the superior defect and the macular area is now an island. No. 5. The critical stage just before central vision is lost. No. 6. The final stage is a helpless state because the peripheral vision remaining is of no use.

is usual, the loss may not be noticed until something gets into the better eye, compelling its closure and the patient suddenly becomes aware of his serious state. Glaucoma is always bilateral so when the patient goes to learn what is wrong with the blind eye, he is astounded to find the medical man very much interested in the apparently good eye. The symptoms of glaucoma are as follows: increased intra-ocular pressure, cupping of the optic discs, para-macular field losses and large sluggish pupils.

We are interested in getting these cases when there may be only intermittent attacks of increased pressure, slight cupping of the discs and the field losses not much more than enlarged blind spots. The pupil may be small because glaucoma is a disease of adults over 45 and the normal pupil of that age is small and rigid. The tension is taken by the tonometer which measures the depth of the dimple made in the cornea by a plunger under a definite weight. Cupping is seen with the ophthalmoscope. The defects of the field of vision are found by white test objects of $1\frac{1}{4}^{\circ}$ moving against an illuminated flat surface, rather than on the perimeter. The simplest way to reduce internal pressure is to pull the periphery of the iris away from the angle of the anterior chamber to free the drainage spaces. Pilocarpine and eserine are used for this purpose. They are indispensable in emergencies and successful in holding the tension within bounds in some cases for years. As a rule, they lose their efficiency after a time and an operation must be done. The most successful of these is the corneo-scleral trephine which permits the aqueous (fig. 3) to seep through an opening in the cornea at the angle of the chamber into a pocket under the conjunctiva, making a filtering bleb of conjunctiva at the limbus. Cure of glaucoma simplex is no more possible than the cure of old age. Our operations do not attack the cause of the disease, but facilitate the escape of fluid from the eye, reducing the tension. To hold a patient's vision for five to a dozen years may not seem much to some but to those of us who have treated



Fig. 3: Glaucoma simplex with acute attack. Above is the filtering bleb of a successful trephine. The iris is atrophic with several apertures and two pigmented clumps. Several opaque spicules in the lens show the pernicious effects of intra-ocular pressure. Note the large pupil.

this disease before the trephine operation was introduced, it is a triumph indeed.

The ultimate tissue changes causing glaucoma are too minute to be seen by the microscope but the later results of these changes are very evident. The periphery of the iris and the ciliary body to which it is attached, are moved forward encroaching upon the angle of the anterior chamber (fig. 4) where the filtering process mainly occurs. There are certain factors that operate perniciously upon the potential or latent glaucoma status. Dilatation of the pupil for a long period or even a modest dilatation at times, may precipitate an acute

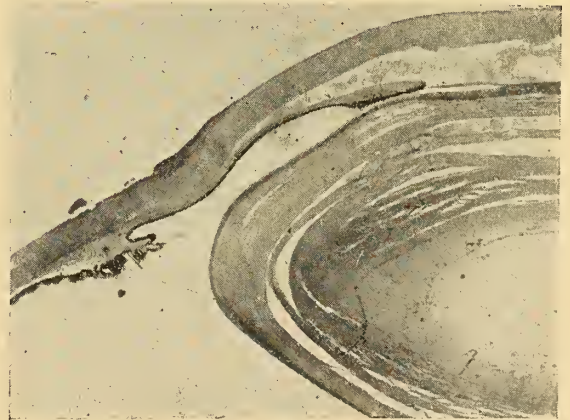


Fig. 4: Advanced glaucoma. The iris and ciliary body have moved forward, obliterating the filtering angle.

stage of the disease similar to placing a string around the base of a finger. For this reason, atropine is used cautiously in older persons. Grief and excitement have a serious effect upon latent glaucoma. It is not unusual for an apparently normal eye to become painful and lose vision suddenly, after the loss of a dear one. It is asserted by many that caffeine has a peculiarly bad influence upon the eye with sub-normal drainage. This is analogous to the pernicious effect of tobacco in angina and Buerger's disease. Another pernicious factor is syphilis which operates through its effects upon the nerve elements and blood vessels. Thyroid dystrophies and diabetes are other factors to be considered. It is strange but a person may have high blood pressure, say 200 mm., yet the intra-ocular pressure may be normal.

How is the general practitioner to do his share in getting these patients in the early stages when treatment produces results? Too much is expected of the general practitioner today but it is fair to ask him to be glaucoma conscious, to employ Snellen test charts as a part of his office equipment and to refer suspicious cases to the specialist. He should realize that examinations of adult eyes merely to learn what glasses may be necessary to permit the

presbyopic patient to read the paper, are entirely inadequate and that a periodic examination at two and a half year intervals is necessary to keep the normal adult eye fitted with the glasses needed for reading and near work, (if the distant vision is normal). These examinations should be complete, not only to fit reading glasses but to detect the early stages of glaucoma, the earliest indications of cataract, cardiovascular-renal disease, diabetes and the various changes incident to growing old. The examiner must be a medical man qualified by experience and training to do this particular job. The practitioner should make plain to his patients the difference between the examination of the oculist and that of the non-medical examiner. Many non-medical eye examiners use the title of doctor to suggest to patients that he is competent to detect eye pathology. This he is not trained to do, nor required by law to do. To make this clear, a decision by the Supreme Court of Alabama is cited from a case brought by a client of an optometrist who claimed she had been given glasses to relieve her symptoms. After several months' use of the glasses one eye was blind from glaucoma and detached retina. The court said the optometrist was in duty bound to advise the patient if there was any disease of the eyes that he should recognize. But this disease was not one a skillful optometrist should be expected to know. The physician's responsibility is quite different and to show this, another decision will be used. A patient was under treatment by a physician and among his complaints were some concerning the eyes. After some time the patient went to a specialist who diagnosed glaucoma and the patient brought suit, during the trial of which the judge said that if the doctor did not know what was wrong with his patient, he should have sent him to some one who did. I am not quoting this for any other reason than to show the status of the physician and the non-medical eye examiner before the law.

The war has deferred many decisions but eventually the glaucoma problem will

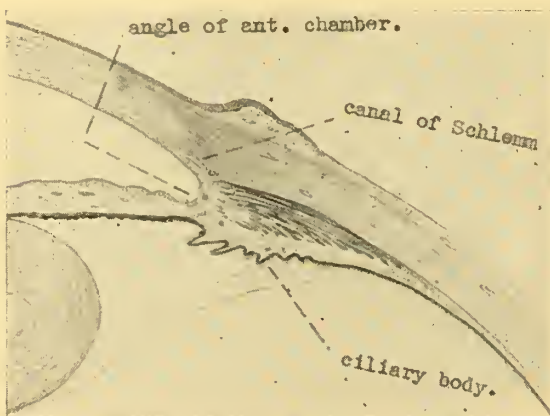


Fig. 5: Section of normal eye, showing ciliary body, angle of anterior chamber, canal of Schlemm. Aqueous is secreted by the ciliary body forward to the anterior chamber angle where it filters through the spaces of Fontana into the canal of Schlemm, portal to the venous side of the circuit.

be part of the public health program of most states. The medical profession will be called upon for advice in these programs and must take the responsibility of guiding the efforts to obtain results.

The practical way to save otherwise healthy adults from premature relegation is to make those who come in contact with eyes glaucoma conscious. This includes nurses, public health officials, high school teachers, college personnel, optometrists and most important of all, the general practitioner. From each of these groups, according to his capacity, we must have unselfish service. The object of these efforts will not be to sell glasses nor to collect fees, but to get the self-reliant working man and housewife, rightly proud of their ability to care for those dependent upon them and meet the emergencies of daily life, to realize that the individual is not able to detect the insidious changes of declining years in himself. This is to be a long road

and our successors must take over and carry on.

Some years ago, one of my doctor friends wrote a poem entitled "Bacteria and Common Sense." From it I would quote a stanza because it applies to glaucoma and other responsibilities of the medical profession. "In the garden of Eden, that very first day, there were swarms of bacterial life. On Adam, his wife, his sons and their wives and the beasts and the birds of the air. So when old Gabriel comes with his trumpet to proclaim this old world is through; there'll be germs all over old Gabriel and they'll be in his wind instrument too."

Programs of this kind do not happen, they are the results of hard work by unselfish persons who render a service that cannot be bought. The men and the women who have made our hospitals and homes successful in the many cities of our land are the ones who will accomplish all that is possible with this stubborn disease.

Buy
U.S. War Bonds

NEW ORLEANS Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

C. C. deGravelles, M. D., Ex officio

For one year: Lucien A. LeDoux, M. D., Chairman

H. W. Kostmayer, M. D., Secretary

For two years: James K. Howles, M. D.

For three years: G. C. Anderson, M. D.,

Vice-Chairman

Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D. *Editor-in-Chief*

Willard R. Wirth, M. D. *Editor*

Daniel J. Murphy, M. D. *Associate Editor*

COLLABORATORS—COUNCILORS

H. E. Bernadas, M. D.

J. T. O'Ferrall

Guy R. Jones, M. D.

T. B. Tooke, Sr., M. D.

George Wright, M. D.

Rhett McMahon, M. D.

C. A. Martin, M. D.

W. F. Couvillion, M. D.

Paul T. Talbot, M. D. *General Manager*
1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

ABOLISHING PRIVATE MEDICAL PRACTICE

Under the above caption a folder has been sent by the National Physicians Committee to 135,000 doctors of this country. The folder presents "A factual analysis of the Medical and Hospitalization provisions of the Wagner-Murray Senate Bill 1161 and an explanation of some of their implications." This folder should be read by every physician to whom it was sent, but appreciating that doctors are busy men these

days, it is quite possible that many will put the folder to one side intending to read it later, and then forget it. It is for this reason that very briefly a few of the salient features of the brochure will be mentioned here, succinctly and without elaboration.

Senate Bill 1161 proposes to put in the hands of the Surgeon General of the United States Public Health Service the right "to hire doctors and establish rates of pay; to establish fee schedules for services; to establish qualifications for specialists; to determine the number of individuals for whom any physician may provide services; and to determine arbitrarily what hospitals or clinics may provide service for patients." Should these provisions be made effective by law it would utterly destroy our entire system of medical practice.

The Bill provides for insurance of practically every employee in the United States as well as for self-employed individuals. It would put under an insurance system sixty-two million people. The funds provided are enormous, a minimum of three billion dollars which would be applied to medical care and hospitalization for the insured. With this money the millions of people plus their dependents would be entitled to receive medical, laboratory and hospitalization benefits, the latter for a minimal period of thirty days, possibly up to ninety days.

The Surgeon General of the United States Public Health Service is empowered to make agreements and contracts with agencies, hospitals and with physicians. With the amount of money that is available and the power given to the Surgeon General it is obvious that the control of medical service in this country would be completely in the hands of one man because the Council of sixteen members which is to be appointed by the Surgeon General has no authority other than advisory.

The amount of money to be devoted yearly to this purpose is equivalent to or slightly under the average yearly revenue of the United States Government for a ten year period from 1924 to 1933. Because of the necessity of having to raise this money it is obvious that the enormously swollen

national debt which we will have after the war is over, will have little chance of being refunded. The amount of money to be devoted to the project is almost incomprehensible and unbelievable. It is estimated that every actively practicing doctor in the United States could be employed at an average salary of \$5,000 a year and only about one-fifth of the sum would be needed for this purpose. The brochure also points out that with this amount of money there could be hired every available bed in every non-Government owned hospital for \$5 a day and still only about one-fifth of the sum would be employed, leaving three-fifths for other purposes after these two most important features had been taken care of.

The citizenry of the United States is this day receiving better medical service than any country in the world. It can be said with all honesty that never before has any civilized community obtained the benefits of medicine and surgery as are the people of the United States receiving. Why change the present successful system? The doctors do not want it. The people may be sold the idea of getting something which they think is free, but it will not be free. Nothing is ever free that is of any value. Some one will have to pay for it. It will be the man who has to contribute to insurance funds and through taxes which means you, me and every other gainfully occupied citizen.

If you as a physician are opposed to the Wagner-Murray Bill why not let your Senator or Representative know of your objection. If these Governmental officials, who should represent the will of the people, know that we and most thinking citizens are opposed to this pernicious Bill it will probably be defeated in Congress but we must let our congressional delegation know how we feel. They should know it early and promptly.

NEPHRITIS AND SULFONAMIDES

With the increasing and unfortunately promiscuous use of the valuable sulfonamides, one must constantly be reminded of the dangers the use of these drugs involves

and the precautionary methods that should be used to avoid such complications.

One phase of this subject is discussed by Murphy and Wood*. The paradox is seen of an agent which is often helpful in curing acute glomerulonephritis or pyelitis which on the other hand may produce serious renal damage. While the effect of the sulfonamides in producing mechanical blocking of various portions of the urinary tract and the hematuria, and other complications which follow has been well studied and understood, the nephrotoxic action has been not so well recognized and probably in many instances has been overlooked.

The authors present two cases of nephritis benefited by sulfonamide therapy, a third case cured with sulfathiazole and then another contrasting case with resulting renal damage, uremia and death without urinary tract blockage caused by sulfathiazole.

The proper moral is emphasized. The promiscuous use of the sulfonamides for mild upper respiratory infections should be avoided. The precaution of a proper fluid intake of from 1500 to 2000 c.c. per day, careful evaluation of renal efficiency before therapy, careful observation of the urine during therapy and the maintenance of an alkaline urine should be carefully adhered to. The authors feel that while the presence of sulfonamide crystals in the urine does not mean the presence of kidney damage or that the drug should be stopped, it should cause increased care in the use of the drug and an investigation and maintenance of an optimal drug level in the blood stream. They likewise believe that the administration of one gram of soda bicarbonate with each gram of sulfonamide to produce alkaline urine resulted in fewer crystals than in those with acid urine.

It would benefit all of us to be aware of these dangers and exercise the precautions indicated.

*Murphy, F. D., and Wood, W. D.: Acute nephritis and the effects of sulfonamides on the kidneys, *Ann. Int. Med.*, 18:999, 1943.

CIGARETTE SMOKING

In the past several months there have been several articles in lay and medical publications concerning cigarettes which have attracted considerable attention and caused widespread discussion. Because of the increased use of cigarettes in both sexes the subject is one that is constantly being brought to the attention of the physician and his patient in the management of many conditions.

One phase of the subject is presented in a recent article by Evans and Stewart.* The authors studied the effects of standard cigarettes, denicotinized cigarettes and cigarettes made from cornsilk containing no nicotine, on the peripheral blood flow. Ten normal adult males were studied. The results of these observations are interesting.

The conclusion reached by the authors was that "smoking not only regular cigarettes, but also denicotinized cigarettes or cigarettes of any type should be avoided in the presence of peripheral vascular disease."

*Evans, W. F., and Stewart, H. J.: The effect of smoking cigarettes on the peripheral blood flow, *Am. Heart J.*, 26:78, 1943.

In the summary they enumerate the effects they noted, namely a decrease in peripheral blood flow, an increase in blood pressure and pulse rate, a decrease in the average skin temperature, a rise in rectal temperature, a small increase in basal metabolic rate about twice as often as a small decrease, and slight changes in the electrocardiogram, probably of no significance. All of these changes occurred regardless of whether regular cigarettes, denicotinized cigarettes or non-nicotine cigarettes were used and therefore could not be attributed to nicotine. "It is suggested that sympathetic stimulation brought about by the irritating effect of smoke upon the respiratory tract may be responsible for the changes."

Regardless of what may be the individual physician's personal feeling in this controversial subject, it behooves him to consider such experimental data with relation to the advice he must give the patients whom he sees with peripheral vascular disease. The application of these findings to the patient with coronary artery disease, of which there are so many, is also an important consideration.

ORGANIZATION SECTION

The future of medical practice and economics is of paramount importance to all of us and at this time particularly, it looms large in the minds and hearts of all those interested in organized medicine.

The May Medical Record has this news item: "A committee to study medicine and the changing order has been organized by the New York Academy of Medicine with objectives defined as follows: To be informed on the nature, quality and direction of the economic and social changes that are taking place now and that are clearly forecast for the immediate future; to define in particular how these changes are likely to affect medicine in its various aspects; to determine how the best elements in the science of medicine and its services to the

public may be preserved and embodied in whatever changed social order may ultimately develop."

Dr. Morris Fishbein, in his address before the National Conference on Planning for War and Postwar Medical Services, held in New York recently, spoke of the continuous and rapid evolution the practice of medicine has undergone since World War I, but he nevertheless insists that the fundamental features which have made American medicine the great profession it is have been retained.

Dr. Fishbein says: "American medicine recognizes its obligation. This conference has served to place before all of us the imminent threat of new postwar medical problems. We shall study those problems;

we shall plan; we will meet the obligation inherent on us to provide our people with the quality of medical service that has given us the lowest sickness and death rates in the world.

"The medical profession has recognized the necessity for cooperation between the national, state and local governments with the forces of medicine, public health and welfare in the solution of these problems. However, medical decisions in matters of medical care must be made by medical men or there can be no safety for the patients. When medical decisions are controlled by economic considerations, the medical profession must have a voice in those economic factors.

"Man, whatever his political color, is an individual in illness even more so than in health, and his doctor must remain an individual and not become an official.

"By their own initiative the physicians of this country will have offered to the nation by 1944 the services of more than fifty thousand doctors to meet the nation's needs in time of war. By their own initiative they seek to give to the postwar world the most that American medicine can give for the restoration of the peoples of the world to health and physical fitness. They do not hesitate in offering themselves; they have been trained in the traditions of American medicine.

"They will meet that obligation as they have met every other call placed on them in the past—voluntarily, bound only by the traditions of their great profession, uncompelled by any arbitrary mechanism such as that founded by totalitarian governments to enslave both their people and the physicians who serve them."

ATTENTION ALL PHYSICIANS SENATE BILL 1161

There has been introduced in the U. S. Senate an amendment to the Social Security Act providing for the establishment of a most comprehensive and revolutionary form of federal control of the practice of medicine. Again Senator Wagner is spon-

soring this legislation known as Senate Bill 1161. This is a \$3,000,000,000 contribution for disarranging our great profession. It will unquestionably have the great and influential support of the president and certain members of his cabinet who were actively behind a similar measure some years ago which met with failure.

Look at the totalitarian medical powers granted to the Surgeon General of the United States Public Health Service, if this measure prevails and becomes a law.

*"Senate Bill 1161 makes provision for free general medical, special medical, laboratory and hospitalization benefits for more than one hundred ten million people in the United States.

"It proposes placing in the hands of one man—the Surgeon General of the Public Health Service—the power and authority—

"1. To hire doctors and establish rates of pay—possibly for all doctors;

"2. To establish fee schedules for services;

"3. To establish qualifications for specialists;

"4. To determine the number of individuals for whom any physician may provide service;

"5. To determine arbitrarily what hospitals or clinics may provide service for patients.

"The provisions are so sweeping that, if enacted into law, the entire system of American medical care would be destroyed."

A real emergency exists. Only by united and concerted effort of the medical profession and their friends can this measure be defeated. Write now to your senator for a free copy of Senate Bill 1161. Have three or four of your friends do likewise. Read it and be informed of the dangers threatening our American way of the practice of medicine.

*Quotation from the National Physicians Committee.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

At the recent business meeting of the Louisiana State Medical Society the questions of ownership of the New Orleans Medical and Surgical Journal, the turning over of books and journals to the Library of the Orleans Parish Medical Society, and the Library Extension Service were again raised.

Prior to 1922 the New Orleans Medical and Surgical Journal was published by Drs. Charles Chas-saignac and Isadore Dyer. Following the American Medical Association convention in New Orleans, April 26-30, 1920, the entertainment committee, which was a committee of the American Medical Association and not of the Parish or State Societies, had a surplus in the entertainment fund. This money did not belong to the Orleans Parish Medical Society or the Louisiana State Medical Society, as the entire amount of money collected for entertainment purposes came from the merchants of the City. The American Medical Association stated that the disposition of the surplus rested entirely with the committee.

The committee thought it would be a good investment to purchase the New Orleans Medical and Surgical Journal for the Orleans Parish Medical Society; they felt that the Library of the Orleans Parish Medical Society would receive in books and journals more than the original investment. The Orleans Parish Medical Society refused the Journal, therefore it was offered to the Louisiana State Medical Society and accepted by them after quite some deliberation. The Journal was purchased for a consideration of \$5,000, of which \$3,000 cash was paid from the surplus in the entertainment fund, and the Louisiana State Medical Society was to pay the balance of \$2,000. However, the profit from the Journal was more than sufficient to cover the balance due.

When the committee turned the Journal over to the Louisiana State Medical Society they made certain stipulations which the Louisiana State Medical Society agreed to abide by. These stipulations are: (1) The domicile of the Journal to remain in the City of New Orleans, and (2) all books received for review and all journals received in exchange, or otherwise received by the Journal are

to be turned over to the Library of the Orleans Parish Medical Society.

The New Orleans Medical and Surgical Journal is owned by the Louisiana State Medical Society and is the official organ of all parish and district societies of the State Society.

One must not get the impression that all books and journals in the Library of the Orleans Parish Medical Society have been received from the Journal. The Orleans Parish Medical Society spends several thousand dollars each year in purchasing journals and books, and also in the binding of books and journals. The books and journals received from the New Orleans Medical and Surgical Journal, on an average, amount to approximately 25 per cent.

In February 1938 the Librarian of the Orleans Parish Medical Society suggested to the Board of Directors of the Orleans Parish Medical Society that the use of its Library be extended to physicians throughout the state, and that the expense involved in the establishing of this service could be defrayed by charging a small fee to those subscribing. It was felt that this service should be given free to the members of the Louisiana State Medical Society and was, therefore, brought up at a meeting of the House of Delegates of the State Society, suggesting that a portion of each member's dues be allocated to the library extension service fund to defray the expense involved, but was rejected by them. The plan of establishing an extension service to the out-of-town physicians and charging a small fee to defray expenses was then presented to the general membership of the Orleans Parish Medical Society and approved. An announcement of this service was sent to every out-of-town member of the Louisiana State Medical Society, as well as physicians in the larger towns and cities of Mississippi and Alabama.

We trust that one day the Louisiana State Medical Society will see the benefits a physician derives from this service and, therefore, make every member of the State Society eligible by allocating a portion of his dues to the library extension service fund of the Orleans Parish Medical Society.

LOUISIANA STATE MEDICAL SOCIETY NEWS

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	

SOUTHERN MEDICAL ASSOCIATION

A recent meeting of the Executive Committee of the Southern Medical Association was held in New Orleans under the chairmanship of Dr. Lucien A. LeDoux. The Executive Committee unanimously agreed that the regular annual meeting should be held next November 16-18. This meeting will be held in Cincinnati under the general chairmanship of Dr. James A. Ryan of Kentucky.

At the time of the meeting of the Southern there will be held concurrently meetings of a half dozen different national medical associations which have southern branches.

The opening day of the meeting will be devoted to general clinical sessions. On Wednesday and Thursday will be held two general meetings in which papers will be presented from the association sections, one representing surgical specialties and the other medical specialties. This year there will be no formal section meetings but each of the twenty-one sections will contribute its apportioned number of papers to the general sessions. Needless to say war medicine and surgery will be actively stressed.

SPECIAL NOTICE

Cooperation of all Louisiana physicians is requested in complying with the following request received by the office of the Secretary of the State Society.

June 21, 1943.

Directive of the President

Dear Sir:

There is set out below for your information the text of a Presidential Directive dated January 8, 1943. I thought you would be interested in receiving this information so that you will be apprised of the President's wishes relative to the handling of subversive information and investigations based thereon.

"January 8, 1943.

"Police Cooperation

"On September 6, 1939, I issued a directive providing that the Federal Bureau of Investigation of the Department of Justice should take charge of investigative work in matters relating to espionage, sabotage and violations of the neutrality regulations, pointing out that the investigations must be conducted in a comprehensive manner, on a national basis and all information carefully sifted out and correlated in order to avoid confusion and irresponsibility. I then requested all police officers, sheriffs, and other law enforcement officers in the United States, promptly to turn over to the nearest representative of the Federal Bureau of Investigation any such information.

"I am again calling the attention of all enforcement officers to the request that they report all such information promptly to the nearest field representative of the Federal Bureau of Investigation, which is charged with the responsibility of correlating this material and referring matters

which are under the jurisdiction of any other Federal agency with responsibilities in this field to the appropriate agency.

"I suggest that all *patriotic organizations and individuals* likewise report all such information relating to espionage and related matters to the Federal Bureau of Investigation in the same manner.

"I am confident that all law enforcement officers, who are now rendering such an invaluable assistance toward the success of the internal safety of our country will cooperate in this matter.

(S) Franklin D. Roosevelt."

It is requested that you bring the contents of this directive to the attention of the members of your organization for their information and guidance in reporting such matters to the Federal Bureau of Investigation, 1308 Masonic Temple Building, New Orleans, Louisiana, telephone CANal 4671. It is to be noted that all individuals and organizations were included in the above directive by the President.

Very truly yours,

(S) R. A. GUERIN,
Special Agent in Charge.

SHORTAGE OF SMALL ANIMALS

There is a tremendous need for certain small animals necessary for laboratory and therapeutic purposes as there is an acute shortage of cats for assaying of digitalis, guinea pigs for tuberculosis studies and rabbits for the preparation of serum. It is understood that the War Production Board will be sympathetic in giving priority for material necessary to raise small animals. In view of this shortage physicians might encourage the raising of these animals by their younger patient groups.

TOTAQUINE

In view of the shortage of quinine it might well be advisable to record the fact that totaquine has been found to be practically as valuable as quinine by the Liverpool School of Medicine. From Panama comes the announcement that at the Gorgas Hospital, when given in huge doses, the results have been excellent.

FAUST HONORED

The College of Physicians of Philadelphia awarded the Alvarenga Prize on July 14, 1943 to Ernest Carroll Faust, Professor of Medical Parasitology, and Acting Head of Department of Tropical Medicine, Tulane University, for his outstanding contributions to our knowledge of parasitology and tropical medicine.

This Prize was established by the Will of Pedro Francisco Da Costa Alvarenga of Lisbon, Portugal, an Associate Fellow of the College of Physicians, to be awarded annually by the College of Physicians on each anniversary of the death of

the testator, July 14, 1883, to the author of the best memorial upon any branch of medicine, which may be deemed worthy of the prize.

MEDICAL AND SURGICAL RELIEF COMMITTEE OF AMERICA

More than \$59,000 of medical and surgical supplies were donated during the past 6 months by the Medical and Surgical Relief Committee to the U. S. Navy, the U. S. Coast Guard, the armed forces of our Allies and to welfare groups here and abroad. This brings the total value of shipments up to \$551,699.24 since the Committee was launched 3 years ago, Mrs. Huttleson Rogers, executive chairman, announced today at a meeting to mark the third anniversary of the founding of the organization.

The detailed semi-annual review reported that over 500 portable emergency medical kits were furnished by the Committee to Navy sub-chasers, destroyer-escorts and Coast Guard patrol-boats. Specially designed for the small sub-hunting craft, the patrol-boat and sub-chaser kit is equipped with drugs and instruments to give immediate treatment to casualties or accidents. The medical kits are consigned through the 13 U. S. Naval Districts or are sent directly to the ships' commanding officers.

THE AMERICAN CONGRESS OF PHYSICAL THERAPY

Will hold its twenty-second annual scientific and clinical session September 8-11, 1943, inclusive, at the Palmer House, Chicago. Rehabilitation is in the spotlight today—Physical Therapy plays an important part in this work. The annual instruction course will be held from 8:00 to 10:30 a. m., and from 1:00 to 2:00 p. m. during the days of September 8, 9 and 10, and will include a round table discussion group from 9:00 to 10:30 a. m., Thursday, September 9. The scientific and clinical sessions will be given on the remaining portions of these days and evenings. A feature will be an hour demonstration showing technic from 5:00 to 6:00 p. m. during the days of September 8, 9 and 10. All of these sessions will be open to the members of the regular medical profession and their qualified aids. For information concerning the instruction course and program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

INFECTIOUS DISEASES IN LOUISIANA

For the week ending June 12 the weekly morbidity report of the Louisiana State Board of Health showed the most prevalent disease to be pulmonary tuberculosis with 34 cases. There were 17 cases of measles, 13 cases of mumps, and five cases of typhoid fever. There were no cases of pneumonia reported for this week. The following week, ending June 19, the number of cases of pul-

monary tuberculosis increased to 46, again heading the list. There were two cases of poliomyelitis reported, one from Calcasieu Parish and one from Orleans Parish, and the typhoid fever cases again totaled five. Other diseases reported in numbers greater than ten included 19 cases of measles, 18 of mumps and 14 of whooping cough. There were three cases of rabies in animals reported. For the week ending June 26, pulmonary tuberculosis had increased to 68 cases and there were 12 cases of cancer, 10 cases of malaria, 13 cases of measles and 13 cases of whooping cough. Again two cases of poliomyelitis were reported, one from Orleans Parish and one from Rapides Parish. There were nine cases of typhoid fever scattered through Beauregard, Franklin, Natchitoches, Orleans and Richland Parishes. There were two cases of endemic typhus reported, one from Acadia Parish and one from Iberia Parish. In the report for the week ending July 3, which contained the monthly report of venereal diseases, there were 1953 cases of syphilis, 1282 of gonorrhea and 93 cases of chancroid reported. The number of cases of pulmonary tuberculosis had decreased to 31, the total for the four previous weeks amounting to 295. Two cases of undulant fever were reported and there were seven cases of meningococcus meningitis reported. Other diseases in the larger amounts were 38 cases of bacillary dysentery, 14 cases of granuloma inguinale, 22 cases of lymphopathia venereum, 29 cases of measles, 20 cases of mumps and 10 cases of whooping cough.

NEW RECOMMENDATIONS ON BURNS AND WOUND INFECTIONS IN AIR RAID CASUALTIES

The Medical Division of the Office of Civilian Defense has revised its pamphlet "Treatment of Burns and Prevention of Wound Infections" to incorporate new technics that have been developed within the past year. The recommendations in this pamphlet are based on recent directions of the Committee on Chemotherapeutic and Other Agents and the Subcommittee on Burns of the Committee on Surgery of the Division of Medical Sciences of the National Research Council. Originally drawn up by these committees for the armed forces, the recommendations have been modified to adapt them to the problems involved in the treatment of civilian casualties.

Recommendations for the use of sulfonamides are accompanied by the observation that these drugs must be used more cautiously in the treatment of civilian wounds than is necessary in the care of military casualties, for the following reasons:

"The injured may include individuals of all ages and with various types of pre-existing disease, instead of a selected group of healthy young males. The possibility of toxic effects is therefore greatly enhanced. Moreover, it is assumed that in civilian injuries, hospitalization will be possible in a relatively short time, whereas in mili-

tary operations such is not always the case. This usually makes it possible to postpone all consideration of chemotherapy until the injured have been hospitalized. It is then possible to administer sulfonamides with better safeguards and to consider such contraindications as other pathological conditions or known sensitivity to individual drugs. The dangers of dehydration can also be better prevented or overcome under such circumstances."

THE EMERGENCY CARE OF BURNS

Whenever casualties with extensive burns can be admitted to hospitals without delay, and definitive treatment can be instituted promptly, morphine sulphate, one-half grain, should be administered at the scene of the incident and no local therapy applied to the burned area except sterile gauze to exposed surfaces to prevent infection.

The discussion of definitive treatment of burns has been expanded to stress the necessity for administration of large amounts of plasma.

"In patients with severe burns, quantities up to 12 units or more may be required in the first twenty-four hours," it is pointed out. "To the patient in critical condition, plasma must be given rapidly (as much as 500 cc. in 10 minutes may be necessary) and not allowed to flow drop by drop. It must never be administered by any other than the intravenous route. Syringe injection may be used. If facilities for hematocrit determinations are available, the following general rule can be used for guidance regarding the amount of plasma required. For each point that the hematocrit is above 50 percent cells, at least 100 cc. of plasma should be administered. If clinically satisfactory results are not obtained with this dosage, larger quantities should be given." A footnote points out that rapid administration of intravenous fluids may be dangerous to cardiac patients and that the physician's judgment will have to determine the amount as well as the rate of administration in such cases.

WAR FOOD ADMINISTRATION

Of interest to all physicians is Amendment 34 to Ration Order 16 and Amendment 25 to General Ration Order 5 issued by the Office of Price Administration under date of June 1, which places evaporated and condensed milk on the list of rationed products.

These types of milk are added to the group of rationed foods containing meats and fats, for which red ration stamps are needed, without any increase in the total number of points allowed for this group. One point is required for one 14½-ounce can or for two 6-ounce cans or for two 8-ounce cans.

Translated into feeding schedules, this means that the infant or child may use 7 of his 16 points per week for his milk requirements in terms of evaporated milk which allows slightly less than the equivalent of a quart of whole milk per day, and

have 9 points remaining for his meat and fat requirements. This provides ample allowance of meat and fats for the infants and also for the young child who may still be using evaporated instead of fluid milk.

An invalid or any other person whose health requires that he have more canned milk than he can obtain with the stamps in his War Ration Book II, may apply at his local War Price and Rationing Board for additional points under Section 2.4 of Ration Order 16. With the application the consumer must submit a written statement of a licensed or registered physician or surgeon showing why the consumer must have more canned milk, the amount needed during the succeeding two months and why unrationed foods cannot be used instead.

RUSSIAN WAR RELIEF

Russian War Relief, which is sending American medical textbooks to Russian schools training surgeons and doctors for the front lines, has issued a new appeal for contributions of medical literature.

The appeal was in response to requests from the Russian Society for Cultural Relations with Foreign Countries. Russian officials point out that many Soviet schools of medicine were evacuated thousands of miles to Central Asia and the Urals from Kharkov, Kiev and other occupied cities. In most cases libraries had to be left behind. The Kiev Medical Institute, cited as one example, was moved to Chelyabinsk in the Urals, 1300 miles away. The Kharkov Medical Institute, whose faculty and student body were evacuated as the Reichswehr battered at the city's gates, is now at Chkalov, on the Ural River.*

Many of the books sent from America to these and other medical schools were contributed by doctors and medical associations from all parts of the United States. They range in subject from child development to neuroses in war.

Inquiries or gifts of medical books should be sent to Russian War Relief, Inc., 11 East 35 Street, New York, 16, N. Y. A complete list of the books needed in the Soviet Union will be sent upon request. Donors may attach to their contributed books notes which will be forwarded to Russian medical libraries receiving the books.

AMERICAN RED CROSS

July 8, 1943.

The Editor,
New Orleans Medical & Surgical Journal,
1430 Tulane Avenue,
New Orleans, Louisiana.

Dear Sir:

Just recently Miss Marguerite Wales, our Director of Nursing Service for the Eastern Area of the American Red Cross requested that I ask the assistance of the presidents and editors of the

State Medical Association Journals in bringing to the attention of the medical profession the urgent need for more nurses for the Armed Forces. As you know, the Surgeon General of the Army has given the Red Cross entire responsibility for the recruitment of nurses. We also recruit for the Navy Nurse Corps. Our military services need nurses at the rate of 36,000 annually.

Miss Wales informs me that of the nurses assigned to the Armed Forces at this time only 21% came from the private duty group, while 68% are from the institutional group, 6% from Public Health, 4% from a miscellaneous group, and 1% from the industrial group. There is need for active recruitment of nurses from the private duty group.

We believe that the physician, better than anyone else, is in a position to encourage private duty nurses to enroll for military duty, and teach the layman to further contribute to winning the war by dismissing a private nurse as soon as the stage of convalescence has been reached. The medical profession, even though at a great sacrifice, can discourage the layman from using the private duty nurses longer than it is necessary for the patient to have sufficiently arrived at that stage in his illness from which point onward he can be adequately cared for by a general floor duty nurse in the hospital or by his family at home.

Such education of the patient and immediate family by the physician would, we believe, bring about an equitable distribution of nursing care and release a considerable number of private duty nurses for enrollment for services with our Armed Forces.

With kindest regards, I am,

Very sincerely yours,

John F. Busch, M. D.,

Director Medical & Health
Service, Eastern Area.

JFB/amh

THE WOUNDED MUST NOT DIE

Marguerite Wales

Director of Nursing Service, Eastern Area

The wounded must not die! This is the call to the colors which has gone out to registered nurses from the American Red Cross. Thirty-six thousand nurses are needed annually for war duty—30,000 for the Army and 6,000 for the Navy. The number required each month is 3,000 nurses, yet at no time this year has the quota been met.

Appointed by the Surgeon-General of the U. S. Army as the official nurse recruiting agency, the Red Cross is now asking the support of physicians in presenting the appeal to the members of the nursing profession whose presence in the amphitheatre of conflict is essential to the winning of the war. Enrollment is not obligatory. Nurses must be convinced of the need and encouraged to enter service. Doctors by giving their advice and counsel can help nurses to make their decisions.

The size of the Army in World War II is twice that of the last war, and there are six times as many military posts inside the United States and five times as many outside our territorial limits. Yet the increase of nurses is not nearly proportionate. In the last war 23,868 were serving; so far in this war approximately 30,000.

To determine the availability of nurses and the distribution of their services, a recent survey was conducted by the United States Public Health Service. From an estimated 500,000 graduate nurses in the United States, 300,000 replies were received to the questionnaires.

Tabulating the distribution of nurses in 30 representative states, it was found that nurses assigned to the armed forces came from the following groups: institutional, 68 per cent; private duty, 21 per cent; public health, 6 per cent; miscellaneous, 4 per cent; and industrial, 1 per cent.

Using a previous inventory for the same states taken in 1941, a comparison was made between the distribution of nurses in major civilian fields for that year and for 1943. The table follows:

	1941	1943
Institutional	47%	44%
Public Health	10%	11%
Private Duty	60%	62%
Industrial	3%	7%

The above figures are a significant index of what has happened in the various fields of nursing as affected by the military situation. The loss has been in institutions, while public health, and in a larger measure, industry have gained. Private duty assignments, on the other hand, have remained practically the same. It is from this field primarily that nurses must be released for military duty.

The request for private duty nurses comes to physicians first, and it is they who can help greatly by bringing to the attention of their patients the shortage of nurses in the armed forces. The Red Cross appeals to physicians directly to interpret this need to the public, especially to the nurses themselves and to their patients.

Nursing "as usual" cannot go on and civilian hospitals will be forced to operate under the strain of reduced staffs. Yet inventories reveal that there is a back-log of nurses who have yet to be called upon to fill in the gaps. In 1941 there were 13,753 active and available nurses; in 1943 the number has been increased to 23,009. In reverse ratio, the number of inactive nurses listed as not available has been reduced from 42,647 in 1941 to 29,124 in 1943.

Outside the patriotic motive, the inducements to enter the service are more attractive than ever before. Nurses go into the Army with the relative rank of second lieutenant and go into the Navy with the rank of ensign. They receive a monthly base pay of \$150 with "allowances" increasing the value to an estimated \$216. Promotion to the

higher ranks carries the same pay increases as in other branches of the services, and privileges and responsibilities are the same as for any military officer of comparable rank. Government insurance and retirement privileges are included.

Through nurse recruitment stations set up in every city of 25,000 population or more, the widespread facilities of the Red Cross have been used to carry the appeal to nurses and the public again and again. Now the Red Cross turns to the medical profession for its active cooperation in this all-important campaign.

We cannot be secure on the home front unless our troops have the best nursing care; we cannot be certain of victory unless the wounded have every chance to live.

MEDICAL OFFICERS NEEDED FOR FEDERAL CIVILIAN WAR SERVICE

The critical shortage of physicians to engage in vital war work in the civilian branches of the Government continues. The great need for these men resulted in the announcing of a liberalized civil-service examination for Medical Officers in 1941. The Civil Service Commission has just revised and re-announced this examination.

The twenty optional branches under which doctors may apply range from General Practice to Aviation Medicine. Those appointed will perform professional duties as doctors of medicine in active practice in hospitals, in dispensaries, or in the field or in rural areas; or in bureaus of the Government such as the Veterans Administration, Civil Aeronautics Administration, Public Health Service, and Food and Drug Administration. Doctors will also be used in industrial establishments under direction of the War Department.

Applicants for all grades must have received the degree of M. D. from an accredited medical school. Applicants for the Senior Medical Officer grade (\$5,228 a year) must have had at least 5 years of appropriate medical experience; for the Medical Officer grade (\$4,428 a year), 3 years of experience in addition to a required internship; and for the Associate Medical Officer grade (\$2,828) 1 year of internship. The salaries quoted include overtime pay.

Further information and application forms may be obtained at first- and second-class post offices, Civil Service Regional Offices, and the Commission in Washington, D. C.

NEWS ITEMS

Surgeon Charles E. Allen of the United States Public Health Service has been relieved of duty in Atlanta and directed to proceed to District #4 of the U. S. P. H. S. in New Orleans.

Assistant Sanitarian Melvin E. Griffith has been relieved of duty in New Orleans and directed to proceed to Oklahoma City.

Past Assistant Dental Surgeon William N. Neaf has been relieved of duty in Stapleton, Staten Is-

land, New York and has been directed to serve as District Coast Guard Officer of the 8th Naval District in New Orleans.

TRANSPORTATION PLANS FOR CIVILIAN DEFENSE

Transportation for casualties from scenes of disaster to hospitals and for injured persons or other patients removed from Casualty Receiving Hospitals to Emergency Base Hospitals are included in plans for emergency transport service during war disasters, described in recent Operations Letters issued by the Office of Civilian Defense.

Plans for local transportation are centered in the Transport Officer of the U. S. Citizens Defense Corps. It is the duty of the Transport Officer to maintain inventories of local equipment that can be used by the various emergency services of the Citizens Defense Corps, and he is responsible for organization, training, and supervision of volunteer drivers' units. Such equipment may include passenger cars, station wagons, motorcycles, ambulances, and other private vehicles. The instructions provide, however, that ambulances and cars or trucks used as improvised ambulances, with their drivers, should be assigned regularly to the Emergency Medical Service and be under its direction.

Through joint action of the Office of Defense Transportation and the Office of Civilian Defense, concurred in by the War and Navy Departments, local commercial motor vehicles, including taxicabs and trucks of small operators, which are now under the jurisdiction of the Office of Defense Transportation, have been released to and also are available to the Transport Officer for local service in case of war emergency. He may make use of such vehicles immediately, without application to the ODT.

For transport facilities needed outside the local area, such as might be required for evacuation of civilians or for transfer of injured persons to Emergency Base Hospitals in other cities or rural areas, the OCD and the ODT are cooperating in the organization of motor transport units in the larger common, contract, and private motor carriers of the critical areas of the country. These units, which will be trained in convoy service, will be provided by the ODT on request of the local Commander of the Citizens Defense Corps through the State Transport Officer and proper ODT district managers. ODT is at present developing an organization in the critical areas of the country under which its district managers will make contact with the local Transport Officers to make certain that each community is organized to function under the plan.

Operations Letter No. 114, issued March 3, which describes the above arrangements, urges cooperative planning between the Citizens Defense Corps and such agencies as the American Red

Cross, the Women's Defense and Ambulance Corps, and local or state automobile associations or clubs, in order that several agencies may not seek to mobilize the same equipment and drivers independently, but may do so in cooperation. It is pointed out, for instance, that most local Red Cross chapters have permanent transportation committees to provide motor transport facilities for disaster relief. By cooperative planning, such facilities can be made available also to the Citizens Defense Corps.

WOMAN'S AUXILIARY

The following are the officers of the Women's Auxiliary to the Louisiana State Medical Society for 1943-1944:

Officers

President—Mrs. George J. Taquino, 18 Fontainebleau Drive, New Orleans.

President-elect—Mrs. Rhodes Spedale, Plaquemine.

First Vice-President—Mrs. W. R. Harwell, 715 Elmwood, Shreveport.

Second Vice-President—Mrs. A. D. Tisdale, Riverside Sanitarium, Monroe.

Third Vice-President—Mrs. D. B. Barber, Pineville.

Fourth Vice-President—Mrs. Thos. Richardson, Minden.

Treasurer—Mrs. Paul Lacroix, 3122 State Street Drive, New Orleans.

Recording Secretary—Mrs. E. Ellender, Houma.

Corresponding Secretary—Mrs. Waldemar Metz, 2437 Jefferson Avenue, New Orleans.

Chairmen of Standing Committees

Archives—Mrs. Jerome E. Landry, 2336 Milan Street, New Orleans.

Bulletin—Mrs. Cassius L. Peacock, 8415 S. Claiborne Avenue, New Orleans.

Cancer Control—Mrs. Edmond Souchon, 3136 Octavia Street, New Orleans.

Doctor's Day—Mrs. C. R. Gowen, 5900 Line Avenue, Shreveport.

Entertainment for Men in Service—Mrs. Arthur D. Long, Jr., 1367 Steele Blvd., Baton Rouge.

Exhibits—Mrs. Donovan C. Browne, 4920 St. Charles Avenue, New Orleans.

Finance—Mrs. Carl Young, 1811 Jahncke Avenue, Covington.

Historian—Mrs. Edward C. Melton, Plaquemine.

Hygeia—Mrs. Robert W. O'Donnell, 117 Stone Avenue, Monroe.

Indigent Widows—Mrs. Aynaud Hebert, 2013 Napoleon Avenue, New Orleans.

Legislation—Mrs. Roy B. Harrison, 2327 Napoleon Avenue, New Orleans.

Organization—Mrs. B. C. Garrett, 4700 Fairfield, Shreveport.

Parliamentarian—Mrs. M. H. Foster, 1316 Albert, Alexandria.

Press and Publicity—Mrs. M. C. Wiginton, Hammond.

Printing—Mrs. Willard Wirth, 402 Vincent Avenue, New Orleans.

Program—Mrs. DeWitt Milam, 1704 Island Drive, Monroe.

Public Relations—Mrs. John S. Dunn, 8410 Pontchartrain Blvd., New Orleans.

Red Cross—Mrs. Clarence B. Erickson, 423 Herndon Avenue, Shreveport.

Revision of By-Laws—Mrs. C. Grenes Cole, 4938 St. Charles Avenue, New Orleans.

Councilors

First District—Mrs. Daniel J. Murphy, 127 S. Solomon Street, New Orleans.

Second District—Mrs. Daniel N. Silverman, 47 Versailles Blvd., New Orleans.

Third District—Mrs. C. C. deGravelles, New Iberia.

Fourth District—Mrs. R. T. Lucas, 535 Perremont Road, Shreveport.

Fifth District—Mrs. A. G. McHenry, 1910 Riverside Drive, Monroe.

Sixth District—Mrs. A. W. Martin, 902 Virginia Avenue, Bogalusa.

Seventh District—Mrs. J. D. Frazar, DeRidder.

Eighth District—Mrs. H. O. Barker, Horse Shoe Drive, Alexandria.

OUACHITA PARISH

Luncheon in the Butterfly room of the Frances Hotel proved a charming interlude for members of the Women's auxiliary to the Ouachita Parish Medical society who were welcomed by Mrs. Irving Wolff, Mrs. John Pracher, Mrs. A. G. McHenry.

Blue delphinium and yellow daisies overflowing from a crystal basket centering the luncheon table created a lovely splash of color.

Mrs. R. W. O'Donnell, president, presided during the short business meeting. She gave a splendid report of the executive board meeting she attended recently in Baton Rouge.

Mrs. Wolff, chairman of the Nurses' Committee, stated that owing to the exigencies of the times, the usual party for the graduating class of St. Francis Sanitarium was not held. However, each 1943 graduate received a gift from the auxiliary wrapped in tissue and tied with purple and gold ribbon, the class colors.

Present were: Mrs. F. C. Bennett, Mrs. Irving Wolff, Mrs. G. T. Gallaspy, Mrs. G. W. Floss, Mrs. John Pracher, Mrs. A. L. Peters, Mrs. David L. Coats, Mrs. Raymond Seshul, Mrs. A. G. McHenry, Mrs. Roland L. Mindlin, Mrs. J. L. Cadranell, Mrs. W. C. Simpson, Mrs. P. L. Perot, Mrs. D. M. Moore, Mrs. R. W. O'Donnell.

This is the beginning of the journalistic efforts of this writer. I shall endeavor to bring you items of interest from your Auxiliary and all I ask is that I have your full cooperation in furnishing all the news possible.

Mrs. Marquio C. Wiginton,
Chairman of Press and Publicity.

BOOK REVIEWS

Manual of Industrial Hygiene and Medical Service in War Industries: Issued under the auspices of the Committee on Industrial Medicine of the Division of Medical Sciences of the National Research Council; Prepared by the Division of Industrial Hygiene, National Institute of Health, United States Public Health Service; Edited by William M. Gafafer, D.Sc. Philadelphia, W. B. Saunders Company, 1943. Pp. 508, illus. Price, \$3.00.

Three major divisions of the text are made: (1) organization and operation of industrial hygiene, (2) prevention and control of disease in industry, and (3) the manpower problem. The first division contains a well organized chapter, Available Services in Industrial Hygiene, new to texts on industrial hygiene. This chapter is particularly of value in that it describes the activities of the various official and unofficial agencies operating in the field and concludes with a discussion of the integration of the services of these various agencies. The third division, The Manpower Problem, almost entirely original in its theme, emphasizes the awareness of the group to the problems of the present-day industrial situation. This division is devoted to the problems of (1) maximum use of manpower, (2) women in industry, and (3) absenteeism.

While this composite book with 16 contributors, 508 pages, and 20 illustrations is primarily intended to be a source of information for industrial physicians, engineers and hygienists, its success in scope and clarity makes it a highly desirable text for the physician only occasionally confronted in his private practice with industrial problems as they relate themselves to an individual patient. It is also to be considered as a text or constant reference source for the medical student in his work in industrial hygiene or industrial medicine.

RALPH H. HEEREN, M. D.

Medical Progress Annual: Edited by Robert N. Nye, M. D. Springfield, Ill. Chas. C. Thomas Co., Vol. III, 1942. Pp. 678. Price, \$5.00.

This volume is made up of reports appearing in the New England Journal of Medicine during 1941. There are fifty-two chapters, which means that there are fifty-two timely topics devoted to medicine and surgery. Quite quickly one is impressed with the fine quality of the work at hand and it requires little effort to realize that these are no ordinary routine reviews but real concise and comprehensive monographs each dealt with by authors and physicians authoritative in their specialties. At the end of each chapter are pertinent references and at the end of the book is a good brief index.

Throughout the book one is impressed by the effort to be scientific yet simple, complete yet not

superfluous. There is no effort made to review the entire literature or to refer the reader to many unimportant and insignificant articles. The authors attempt to present the real advances that bid fair to be of permanent value in the continual progress of medical science. There is no point in nor does time permit of an enumeration of the particular subjects under discussion. The reader of this review will be amply repaid for his or her effort in perusing the contents of this excellent annual. The authors and publisher are to be congratulated for making available to the general medical public this splendid summary of modern medicine in the making.

I. L. ROBBINS, M. D.

Rehabilitation of the Tuberculous: By H. A. Pattison, M. D., F. A. C. P., Livingston, N. Y. The Livingston Press, 1943. Pp. 186. Price, \$2.50.

In the war against tuberculosis almost all of those engaged have been at such close quarters with the enemy that they have had to employ all of their forces and material toward the immediate objectives of saving lives and preventing the spread of that disease. Only a few men have had the vision and the opportunity to drive toward a more distant objective, the restoration of the tuberculous to economic independence through graded work and education. In this country, Dr. Pattison is the outstanding authority in this field of rehabilitation. Twenty-six years of research, writing, administration, and actual medical care of patients have established his position and have now produced this book. Appropriately enough, it is printed by the rehabilitation patients at the Potts Memorial Institute of which Dr. Pattison is the Director and is published by their Livingston Press. The format is itself testimony to the training they have received.

This brief, but thorough review of the whole subject of rehabilitation for the tuberculous is written for both medical and lay workers. Medical terms, wherever used, are defined. The background, theoretical basis, and various methods are discussed in Part 1, with illustrative cases. The problems of fatigue in relation to activation and relapse, the mental aspects of tuberculosis, and the variations in human constitution involved are analyzed. An excellent short chapter is devoted to the question of marriage.

The second part of the study is devoted to an account of the development and methods of eighteen rehabilitation centers and some state programs. These centers are in this country, England, Ireland, Holland, Switzerland, and India. This section is illustrated with photographs of some of these experimental forerunners of the next great phase of the campaign against tuberculosis. Excellent bibliographies are appended

to each section of the book. All of those interested in the care of the tuberculous and in its future should read this book and have it at hand for reference.

J. L. WILSON, M. D.

Autonomic Regulations: Their Significance for Physiology, Psychology and Neuropsychiatry:
By Ernst Gellhorn, M. D., Ph. D. New York, Interscience Publishers, Inc., 1943. Pp. 373. Price, \$5.50.

This monograph concerns itself primarily with the interrelations of the autonomic nervous system and the other organ systems of the body and is based largely on investigations performed in the author's laboratory for a number of years. It is a detailed review and analysis of the influence of the autonomic system on the various organ systems and, in turn, the effects of these organs on the autonomic system. The various chapters include a discussion of the relationship between hormones and the autonomic nervous system and of the autonomic basis of emotions. Emphasis is placed on the fact that autonomic centers differ fundamentally from the somatic centers, inasmuch as changes in the internal environment, which lead to a depression of the cerebrospinal system, are accompanied by an increased excitability of the vegetative centers. Physiologic and pathologic evidence is presented to further the point of view that the autonomic nervous system should be regarded not only as an efferent system carrying impulses from the somatic system to various visceral organs but also as an afferent system whose impulses significantly alter the excitability of the somatic system.

A considerable part of the monograph is devoted to the discussion of the autonomic reactions to an excess of carbon dioxide in the blood, anoxia, asphyxia, hypoglycemia, and hemorrhage and the demonstration that these emergency conditions cause not only a general discharge of the sympathetic-adrenal system but of the vago-insulin system as well. Experiments are cited showing that this is true for the action of various drugs which stimulate autonomic centers.

The latter part of the monograph is devoted to clinical results and applications. The autonomic adjustment reactions which occur during general and spinal anesthesia are discussed. The author shows how the reactivity of the autonomic centers in schizophrenics is fundamentally different from that of normal individuals and he presents a physiological theory of the treatment of schizophrenia.

The bibliography includes 1100 titles to which reference has been made in the text.

H. S. MAYERSON, Ph. D.

Endoscopic Prostatic Surgery: By Roger W. Barnes, M. S., M. D., F. A. C. S. St. Louis, C. V. Mosby Co., 1943. Pp. 232. Price, \$6.00.

Innumerable articles on transurethral prostatic resection have been printed in the current medical journals but this is the first complete text covering the subject in its entirety.

The author has covered the subject from its earliest incipency to the end results and sequelae in a most orderly and explicit manner. The many pitfalls conducive to complications and unsatisfactory transurethral endoscopic surgery are most clearly elucidated.

Although the author mentions and prefers to use his personal modifications to the Stern-McCarthy resectoscope and a personally devised stool, no egotism is demonstrated, giving the experienced resectoscopist credit for developing his personal preferences.

One reading the text may become confused with the manner in which the terms proximal and distal relating to the instruments are used. The author refers to the ocular end nearest the operator as the proximal end and the cutting or working end as the distal end. These relations are made from the operator and not the patient.

This text should be possessed by every resident in urology who anticipates doing prostatic surgery as well as in the library of all resectoscopists.

MONROE WOLF, M. D.

A Textbook of Clinical Neurology: With an Introduction to the History of Neurology: By Israel S. Wechsler, M. D. 5th ed. Philadelphia, W. B. Saunders Co., 1943. Pp. 840. Price, \$7.50.

During the past few years it has been my pleasure and good fortune to review editions of this famous American textbook of neurology.

Since the appearance of the fourth edition there have been numerous advances in neurology. Chemotherapy of meningitis is practically new; headache is better understood, and electroencephalography, "degenerative" diseases and the autonomic nervous system, have all received considerable further study.

The great value of the section on Injuries of the Brain has long impressed me and I have frequently and successfully made use of it in medicolegal work. It never tires me to read Part V, The Neuroses, and I have made frequent use of this too.

Seldom is the book-buyer offered a one-volume work of such excellence, scope and comprehensiveness and in such a satisfactory format.

The only complaint I have to offer is that, when an edition appears, I develop an uncontrollable urge to purchase it. To me it is the best book on neurology there is.

C. P. MAY, M. D.

Atlas of Ovarian Tumors: By Gemma Barzilai, M. D. New York, Grune & Stratton, 1943. Pp. 261. Price, \$10.00.

The book authored by Gemma Barzilai of New York City, is apparently the result of extensive work in medical centers abroad, and is built around a collection of photomicrographs. It is primarily a diagnostic atlas. The book includes photomicrographic plates both in black and white and in color which show the typical histopathology as well as the histopathologic variations of the tumors. No plates of the gross appearance of the tumors are presented.

The classification, though somewhat different, generally conforms to those currently used, being based on the similarity of tumor cells to cells found in the course of embryologic development.

The author briefly summarizes the pertinent data regarding definition, terminology, incidence, gross and microscopic pathology, histogenesis, hormonal activity, if any, clinical course, malignancy and therapy.

Although treatment is not discussed in great detail, the fact that the book is primarily a diagnostic atlas would account for this brevity.

The binding is unique and attractive, but impractical, for the pages are easily torn from the book.

The plates are beautifully reproduced and should be most helpful to both pathologist and clinician.

J. A. CHAMBERLAIN, M. D.

Acute Infections of the Mediastinum: By Harold Neuhoof, D. S., F. A. C. S. and Edward E. Jemerin, M. D., D. S., F. A. C. S. Baltimore, Williams and Wilkins Company, 1943. Pp. 407. Price, \$6.00.

This work is splendidly done and is an excellent presentation of the subject. Approximately two-thirds of the book is occupied with the presentation of cases which the authors have treated. The cases are grouped according to the type of infection: those secondary to trauma of the esophagus, those secondary to upper respiratory tract infections, those secondary to infection of the lung or pleura, and infections of the mediastinum of miscellaneous etiology. The book is profusely illustrated, and in many instances diagrammatic drawings are used to supplement actual x-ray reproduction. These drawings are of great value. At the end of the group of cases there is an analysis of the cases in that group, which is an excellent resumé of the subject matter. The last part of the book deals with the subject of mediastinal infections from a general standpoint. First the surgical anatomy of the mediastinum is considered and the possibility of extension of the infection. The etiology of mediastinal infections as well as pathogenesis is then discussed in detail. Following this, a chapter is devoted to the clinical manifestations in which the diagnosis and differential diagnosis are ade-

quately considered. The last chapter of the book deals with the treatment and results.

The one criticism which this reviewer has is that in a contribution on the subject of mediastinal infections as valuable as this there are no illustrations of the operative therapy. Although it is realized that this book will be of value to many physicians who are not interested in the surgical technic, it is deplorable that an adequate description of the operative procedure with illustrations is not given in such a treatise.

ALTON OCHSNER, M. D.

Transurethral Prostatectomy: By Reed M. Nesbit, M. D., F. A. C. S. Springfield, Ill., Chas. C. Thomas Co., 1943. Pp. 192. Price, \$7.50.

The author does not stress the numerous difficulties the usual resectoscopist encounters. He has modified the working element of the Stern-McCarthy resectoscope so that the instrument may be operated with one hand.

The author apparently has mastered the one hand technic as illustrated by the usual magnificent drawings by William P. Didusch. Probably the last chapter, a rather complete history of transurethral surgery, would be better placed at the beginning of the text.

MONROE WOLF, M. D.

Castor Oil and Quinine; Once a Doctor, Always a Doctor: By George Wonson Vandergrift, M. D. New York, E. P. Sutton, 1942. Pp. 252. Price, \$3.00.

Medical biography today has a special appeal for the lay reader as well as the physician. This story of the author's father, during his days of medical education and practice, holds the reader's attention, not only for its details of everyday routine in the life of a busy doctor of the '80s and '90s, but for its human interest. The book will have a particular appeal for those who are familiar with New York City's lower East Side. The author is Adj. Professor of Ophthalmology in the New York Polyclinic Medical School and Hospital.

The book is readable and of pleasing typography. It forms a worth while addition to our collective portrait of medical life in the last century.

MARY LOUISE MARSHALL

A Manual of Pulmonary Tuberculosis and An Atlas of Thoracic Roentgenology: By David O. N. Lindberg, M. D., F. A. C. P. Springfield, Ill., Charles C. Thomas, 1943. Pp. 219. Price, \$6.50.

In the course of the past two decades roentgenology has taken an increasingly important place in the diagnosis, treatment and control of pulmonary tuberculosis. One might truthfully say that the present day attack upon tuberculosis is based upon roentgenologic findings. Therefore, it is fitting that a leader in the field of radiology as applied to this problem and a pioneer in some of the

newer technics should write a manual on pulmonary tuberculosis illustrated by an atlas of thoracic roentgenology. The author has accomplished this admirably in a minimum of space.

The manual is essentially practical, being based upon the author's years of experience as director of the Macon County (Ill.) Tuberculosis Sanatorium. No attempt is made to discuss pathology or pathogenesis. While the most recent methods of diagnosis and treatment are included, controversial subjects are omitted. Tables are utilized freely. The illustrations, including gross pulmonary pathology, are numerous and practical. The result is a concise and useful review of modern methods of diagnosis, treatment, and case-finding. The shortcomings of this manual are corollaries of its advantages—extreme brevity and the exclusion of other physicians' experience. There is no bibliography. The atlas is a series of excellent roentgenograms of the chest, very well reproduced. The captions might well have been fuller for the instruction of the novice at interpretation of chest roentgenograms. All stages and forms of pulmonary tuberculosis and other chronic pulmonary conditions are well illustrated. The section on planigraphy is valuable. This little book will be found to be very useful to all who have to deal with pulmonary tuberculosis.

JULIUS LANE WILSON, M. D.

Flying Men and Medicine; The Effects of Flying upon the Human Body: By E. Osmun Barr, M. D. New York, Funk and Wagnalls Co., 1943. Pp. 254. Price, \$2.50.

This book was written for the prospective flier. It attempts to present to the layman, in non-technical language, the medical aspects of aviation which determine whether the individual is suited, physically and mentally, to become an aviator. The author has performed this difficult task only reasonably well.

It is unfortunate still to find reference to the fact that the lungs secrete oxygen, a point of view which has been discarded by most physiologists for lack of evidence. In light of recent work it would seem that more emphasis should have been placed on the part played by the eyes, rather than the labyrinths, in the maintenance of the flyer's equilibrium and orientation. Since the pseudo-isochromatic color plates are now almost universally used for the testing of color blindness, this test should have been described along with the yarn tests for this purpose.

H. S. MAYERSON, M. D.

Clinical Significance of the Blood in Tuberculosis: By Gulli Lindh Muller, M. D. New York, The Commonwealth Fund, 1943. Pp. 536. Price, \$3.50.

An extensive and scattered literature has accumulated upon the subject of the changes in the

blood in tuberculosis. Widely varied methods of examination are used and recorded in differing ways. The author of this study has analyzed all of these methods and put them to the practical test of use on cases. She also presents her experience in an analysis of almost seven thousand hematologic studies in her laboratory upon patients with tuberculosis. Her examination of this material is sane, critical, and free of the special pleading which so often accompanies the introduction of new methods, or theories. She shows what can be done and what cannot be done by laboratory methods in determining the state of activity of tuberculous lesions and in following the results of treatment. The various methods of determining the sedimentation rate are discussed in detail. The importance of correcting the sedimentation rate for cell volume is emphasized and a new table is provided for that purpose. There is an excellent bibliography and an index. Published by the Commonwealth Fund at a very low price, this book will be found essential in the working library of every clinical pathologist, every tuberculosis sanatorium laboratory, and every hospital laboratory.

JULIUS LANE WILSON, M. D.

PUBLICATIONS RECEIVED

The Blakiston Company, Philadelphia: *The Genealogy of Gynaecology*, by James V. Ricci, A. B., M. D.

Froben Press, New York: *History of Surgery*, by R. A. Leonard, M. D.

Grune & Stratton, Inc., New York: *Allergy*, by Erich Urbach, M. D. and Philip M. Gottlieb, M. D.

Paul B. Hoeber, Inc., New York: *Memoir of Walter Reed*, by Albert E. Truby, Brigadier General, U. S. A., Retired.

Lea & Febiger, Philadelphia: *Clinical Parasitology*, by Charles Franklin Craig, M. C., M. A. (Hon.), F. A. C. S., F. A. C. P., Col., U. S. A., Retired, D. S. M. and Ernest Carroll Faust, M. A., Ph. D. *Roentgenographic Technique*, by Darmon Artelle Rhinehart, A. M., M. D., F. A. C. R.

Philosophical Library, Inc., New York: *Rehabilitation of the War Injured*, edited by William Brown Doherty, M. D. and Dagobert D. Runes, Ph. D.

Quarterly Review of Obstetrics and Gynecology, Washington, D. C.: *Quarterly Review of Obstetrics and Gynecology*, Vol. 1, No. 1.

W. B. Saunders Company, Philadelphia: *Manual of Fractures*, by C. M. Haar, M. D., F. A. C. S., Captain, M. C., U. S. N. and Frank P. Kreuz, Jr., M. D., F. A. C. S., Lt. Comdr., M. C., U. S. N. *Geriatric Medicine*, edited by Edward J. Stieglitz, M. S., M. D., F. A. C. P. *Gastro-Enterology*, Vol. 1, *The Esophagus and Stomach*, by Henry L. Bockus, M. D.

New Orleans Medical

and

Surgical Journal

Vol. 96

SEPTEMBER, 1943

No. 3

TREATMENT OF CARCINOMA OF THE CERVIX AT CHARITY HOSPITAL*

PRELIMINARY REPORT OF END RESULTS

MANUEL GARCIA, M. D.†

and

LEON J. MENVILLE, M. D.†
NEW ORLEANS

The radium therapy service at Charity Hospital was reorganized in April, 1938; the work was centralized and responsibility for it was assigned to the Department of Radiology. In the intervening five years more than 800 women with carcinoma of the cervix have been referred to us for treatment, but full facilities for their care did not become available till the Department moved to its present quarters in the new building in August, 1939. Between the two stated dates the methods of treatment remained uniform, and this interval of seventeen months therefore is a logical period for analysis, now that sufficient time has elapsed for a preliminary survey of the end results obtained.

It is not our intention to report so-called "cures." We fully realize that survival for a minimum of five years is the accepted criterion for satisfactory control of any type of cancer. But statistical studies have shown that in carcinoma of the cervix the first two years following treatment constitute the critical period and that after the third year the decline in survivors is fairly constant in all series. On this basis the

three year survival rates can be considered significant in judging the merits of the therapeutic policy pursued. At the same time it must be clearly understood that an appreciable number of the survivors for this period subsequently develop late recurrences and eventually die of cancer. With this limitation in mind we propose to describe briefly the plan of treatment followed, to review the work for the period specified and to compare the survival rates obtained with similar figures published from other clinics.

X-RAY AND RADIUM THERAPY

A combination of x-ray and radium therapy was employed whenever possible. Treatment usually began with external x-ray therapy, given in accordance with the technic worked out by Arneson and Quimby.¹ The dose amounted to 1600-2000 r in air through each of six pelvic ports, in a period of 24 days, using 200 KV, 0.5 mm. Cu plus 1 mm. Al filtration, and 50 cm. distance. In addition, many of the patients had pervaginal x-ray therapy according to the method described by Cooper.² The dosage through this route varied considerably but it seldom exceeded 5000 r. Radium therapy was administered approximately a month later, employing a modification of the technic of Regaud and Lacassagne.³ From 5000 to 8000 mghrs. were given in a period of four to eight days, about half in the cervical canal and half in the vaginal fornices. A study of the total tissue dosage attained has been presented elsewhere.

Table 1 shows the composition of the material for the period under study. It comprises 226 consecutive unselected cases of

*Read before the Orleans Parish Medical Society, April 12, 1943.

†From the Department of Radiology, Charity Hospital of Louisiana, and the Tulane University of Louisiana School of Medicine.

TABLE 1
CARCINOMA OF THE CERVIX

Histologically Proved Cases
April 1, 1938 to August 31, 1939

Primary	192
Recurrent	22
Prophylactic	12
Total	226

carcinoma of the cervix proved by biopsy. One patient has been excluded because she had a prophylactic hysterectomy after radiation therapy. But otherwise no case has been deleted for any reason whatsoever, whether treated or untreated, traced or untraced. The rules of the Radiologic Subcommittee of the League of Nations⁴ have been observed, counting as deaths from cancer all deaths from intercurrent disease and all untraced patients.

The prophylactic group (table 2) includes those patients who had clinically healed lesions during the period under study, but who were irradiated nevertheless, with the

TABLE 2
END RESULTS IN MODIFIED CASES

Prophylactic	
Number of cases.....	12
Survived 3 years or more.....	6
Survival rate	50%
Recurrent	
Number of cases.....	22
Survived 3 years or more.....	4
Survival rate	18%

idea of preventing recurrence. For this reason no credit can be claimed for the high proportion of survivals shown. It is very doubtful that the supplementary treatment given had any beneficial effect, since there is no proof for the belief that periodic irradiation will prevent recidivation. As a matter of fact, in a well conceived plan of treatment the tolerance of the normal structures is exhausted, and additional radiation may be injurious. Except in postoperative cases, the policy of administering prophylactic radiation has therefore been abandoned.

Actual recurrences, on the other hand, present a very difficult problem in treat-

ment. The danger of radionecrosis is high, while the prospect of destroying the neoplasm is slight. So it is gratifying to see that even four patients lived for three years, but the group is too small to attach much significance to the survival rate (table 2).

The primary cases, that is, the patients previously untreated, form the bulk of the material (85 per cent), and merit more detailed consideration. Tabulation of the symptomatology and other clinical data will be omitted, as this aspect of the subject has been well covered in numerous publications (Lane-Claypon⁵), and the material at Charity was studied from this standpoint several years ago by Johnson and Tyrone.⁶

It was not possible to follow the plan of treatment already outlined in all cases, either because the patient was unwilling to permit it or because of limitations imposed by the disease and its complications. On purely medical grounds the radical treatment was not feasible in one-fourth of the cases. Aside from extension of the disease beyond the scope of all curative measures, the principal handicap was infection.

Two deaths occurred in the hospital following treatment: One patient went into uremia after her first application of radium; and one patient who had had severe hemorrhages very unwisely was treated with radium while her condition was still very poor and she died three days after a short treatment. The primary mortality thus was 1.07 per cent.

Figure 1 gives the survival curve for the primary cases. This is more informative than the mere statement of the survival rate. Our series is contrasted with a group of untreated patients studied by Nathanson and Welch.⁷ It can be seen that half the untreated cases die within nine months while the same proportion of our patients was lost in 24 months. The marked difference in the slope of the two curves graphically demonstrates the palliative value of irradiation even in patients who live only a brief period after treatment. It is equally obvious that after three years the survival curve for treated cases still diverges appreciably from the curve of "normal" decline

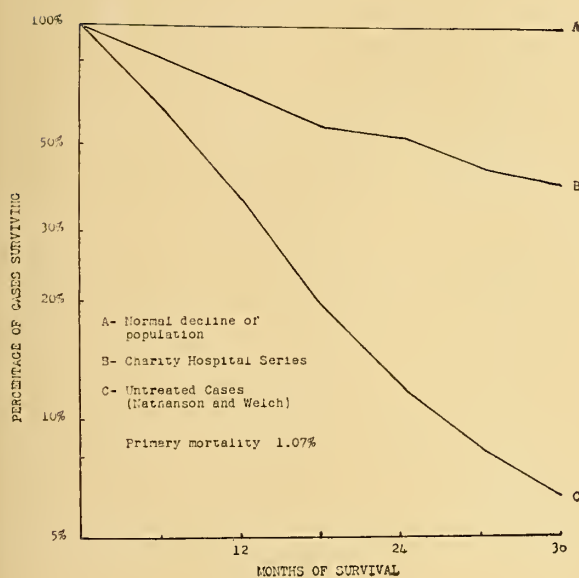
SURVIVAL CURVE
Primary Cases

Fig. 1

of the population and that we must anticipate substantial losses before the fifth year.

Seventy-three patients have survived three years or more; of these, one received no treatment and is not included in the computation of the end results. The absolute three year survival rate is therefore 37.7 per cent.

In exploring the prognostic significance of some of the features of the disease, 12 patients who rejected treatment or who deserted after one or two visits can be eliminated (table 3). The variations in the survival rates recorded are not statistically significant, and we have no evidence to indicate that the type of lesion, the histologic picture, the age of the patient, or the presence of infection definitely influence the outcome of treatment.

On the other hand, it is well established that the anatomic extent of the disease at the time of treatment has a decisive effect on the proportion of cases controlled. This is apparent from table 4, where our results are compared with those reported by Meigs and Dresser.⁸ The rates are computed on a relative basis and lesions of the stump have been eliminated.

There are still some among us who maintain that early cases of carcinoma of the

TABLE 3
PROGNOSTIC FACTORS
179 Primary Cases

	No.	Survivors	Relative Survival Rate Per Cent
A. Histology			
Squamous ca.	174	71	41
Adenocarcinoma	5	1	20
B. Infection			
Septic cases	44	13	29
Uninfected cases	135	59	43
C. Age			
23 - 29	7	3	43
30 - 39	35	15	43
40 - 49	59	27	46
50 - 59	44	16	36
60 - 78	29	11	38
Unknown	5	0	0
4. Type of lesions			
Stump	9	2	22
Intact uterus	170	70	41

TABLE 4
PROGNOSTIC SIGNIFICANCE OF THE ANATOMIC
EXTENT OF THE DISEASE

	Relative Three Year Survival Rates				
Stage	I	II	III	IV	Total
Massachusetts General ⁸					
No. of cases	15	13	100	22	150
Survivors	13	7	28	3	51
Survival rates	87%	54%	28%	13%	34%
Charity Hospital					
No. of cases	16	53	70	31	170
Survivors	13	32	23	2	70
Survival rates	81%	60%	33%	6%	41%
Pondville Hospital ⁸					
No. of cases	5	3	45	17	70
Survivors	5	3	21	1	30
Surv. rates	100%	100%	47%	6%	43%
Charity Hospital (White patients only)					
No. of cases	7	23	24	11	65
Survivors	7	14	9	1	31
Surv. rates	100%	61%	37%	9%	48%

cervix should have a hysterectomy either before or after radium therapy, in order to give the patient the best chance for cure. If this argument is valid the result of the combined treatment by radium and the radical Wertheim hysterectomy should prove it conclusively. Lynch¹⁰ has for many years advocated just such a plan, and in table 5 a comparison is made between the results he has reported and the operable and borderline cases in our series. It can be seen that while the survival rate is some-

TABLE 5
COMPARISON OF END RESULTS
AT THREE YEARS

	Stages I & II	
	Lynch, Univ. of California Radium & Wertheim	Charity Hospital Radium and X-ray
No. of cases	58	69
Primary mortality	6.9%	0%
Survivors	(40)	45
Survival rate	68.9%	65.2%
Difference		$3.7 \pm 8.4\%$

what better in the surgical cases the difference is considerably less than twice the standard error and consequently the discrepancy must be considered meaningless. The two methods of treatment in fact give identical results; this can be shown equally well for the rates reported at the end of five years and of ten years. The advantage for radiation lies in its greater safety, and in that it is suitable for "bad risks", as well as for patients who are good candidates for radical surgery. How much selection must be exercised in employing the operation is apparent from the size of the two groups; Lynch's cases were collected over a period of several years, whereas the Charity group includes consecutive cases that submitted to treatment in a period of 17 months.

The factor of selection can so markedly alter the rates one is able to report that really trustworthy figures are preferably derived from absolute assessments. A comparison on this basis is made in table 6. Similarly, table 7 lists the most recent three year results reported by some of the leading clinics in this country and abroad.¹³⁻¹⁷ Our rates agree satisfactorily with the figures quoted, though the latter do not necessarily represent the best results achieved at the respective institutions; lately some of them have given only their five year rates.

It seems justifiable to conclude that the plan of treatment followed at Charity Hospital during the period under study was sound in its essentials and that the yield in survivors has not been entirely disappointing. There is still no reason for satisfaction with the degree of success attained, but on the contrary, urgent need for substantial improvement.

TABLE 6
ABSOLUTE THREE YEAR SURVIVAL RATES

Schmitz Classification				
	I & II	III	IV & V	Total
Ward and Sackett ¹¹				
Woman's Hospital				
No. of cases	32	119	10	161
Survivors	21	41	0	62
Survival rates	65.6%	34.5%	0%	38.5%
Hahn ¹²				
American Oncologic Hospital				
No. of cases	24	24	94	142
Survivors	20	11	22	53
Survival rates	83%	46%	23%	37%
League of Nations				
Classification	I	II & III	IV	Total
Charity Hospital				
No. of cases	18	134	39	191
Survivors	14	56	2	72
Survival rates	78%	42%	5%	37.7%

TABLE 7
ABSOLUTE THREE YEAR SURVIVAL RATES

	Cases	Per Cent
Regaud and Hermet ¹³	873	38.9
Curie Institute Paris		
Charity Hospital	191	37.7
Bowing & Fricke ¹⁴	1079	35.1
Mayo Clinic Rochester		
Healy ¹⁵	1574	32.7
Memorial Hospital New York		
Heyman ¹⁶	674	27.1
Radiumhemmet Stockholm		
Cade ¹⁷	52	46.2
Radium Institute London		
Charity Hospital (White patients only)	71	43.6

SUMMARY

From April, 1938 to August, 1939, 226 cases of carcinoma of the cervix were treated at Charity Hospital. The method of treatment and the composition of the material are described. The absolute three year survival rate in primary cases is 37.7 per cent. Prognostic factors are evaluated and satisfactory agreement is shown be-

tween the results obtained and the figures reported from other clinics.

Acknowledgments: Full credit should accrue to Dr. Robert W. Cooper, now of Shreveport, Louisiana, for his share in this work. He was in charge at the time the radium service was reorganized and fully one-third of the survivors reported here were treated entirely by him or under his supervision. The work also owes much to the magnificent cooperation of all the Gynecological Services at the Hospital, and to the Tumor Clinic, where many of the cases were followed in 1938 and 1939.

REFERENCES

1. Arneson, A. N., and Quimby, E. H.: The distribution of roentgen radiation in the average female pelvis for different physical factors of irradiation, *Radiology*, 25:182, 1935.
2. Cooper, Robert W.: Intravaginal roentgen therapy in the treatment of carcinoma of the cervix, *New Orleans M. & S. J.*, 91:445, 1938.
3. Regaud, Cl.: Sur les principes radiophysiologiques de la radiothérapie des cancers, *Acta Radiologica*, 11:455, 1930.
- Regaud, Cl.: Considerations sur la radiothérapie des cancers cervicouterins, d'après l'expérience et les résultats acquis à l'Institut du Radium de Paris, *Radiophys. et Radiother.*, 3:155, 1934.
4. Lacassagne, A.: Radiotherapy of Cancer at the Radium Institute of Paris. *Nelson Loose-Leaf Medicine*, 1931.
5. Heyman, J.: On a uniform presentation of results of radiation therapy in uterine cancer, *Am. J. Roent.*, 43:404, 1940.
6. Lane-Claypon, J. E.: Cancer of the uterus: A statistical inquiry into the results of treatment, being an analysis of the existing literature, *Rep. on Pub. Health and Med. Subj.*, No. 40, 1927.
7. Johnson, C. G., and Tyrone, C. H.: Uterine cancer—A report covering the period June, 1927 to June, 1932, *Surg. Gynec. & Obstet.*, 58:113, 1934.
8. Nathanson and Welch: Quoted by Meigs, reference 9.
9. Meigs, J. V., and Dresser, R.: Carcinoma of the cervix treated by the roentgen ray and radium, *Ann. Surg.*, 106:653, 1937.
10. Meigs, J. V., and Jaffe, H. L.: Carcinoma of the cervix treated by the roentgen ray and radium, *Surg. Gynec. & Obstet.*, 69:257, 1939.
11. Lynch, F. W.: The radical abdominal operation for carcinoma of the uterine cervix. In: *Pack and Livingston, Treatment of Cancer and Allied Diseases*, Chapt. XCIV, Vol. II pp. 1606-1631, Paul B. Hoeber, N. Y., 1940.
12. Ward, G. W., and Sackett, N. B.: Results of radiation therapy for carcinoma of the uterus, *J. A. M. A.*, 110:323, 1938.
13. Hahn, G. A.: Three-year and five-year end results in the treatment of carcinoma of the cervix at the American Oncologic Hospital, *Am. J. Roent.*, 48:195, 1942.
14. Regaud, Cl., and Hermet, P.: Evolution des epitheliomes cervicouterins traités par les méthodes radiothérapiques et non guéris, *Radiophys. et Radiother.*, 3:349, 1937. Also *Am. J. Roent.*, 21:1, 1929.
15. Bowling, H. H., and Fricke, R. E.: Carcinoma of the uterine cervix, *Am. J. Roent.*, 40:47, 1938.
16. Healy, Wm. P.: Carcinoma of the cervix uteri, *J. A. M. A.*, 97:1680, 1931.
17. Heyman, J.: Quoted by Meigs and Jaffe, reference 9.
18. Cade S.: *Malignant Disease and its Treatment by Radium*, Williams and Wilkins, Baltimore, 1940, p. 868.

DISCUSSION

Dr. Peter Graffagnino (New Orleans): My discussion of this very interesting and informative paper will be based upon data, still incomplete, which I am now collecting with the aid of a grant from the Helis Research Institute. The study will eventually concern 500 unselected proved cases of carcinoma of the cervix treated at the New Orleans Charity Hospital over an approximately four year period ending in June, 1937. Since the authors' analysis begins in 1938, there is no overlapping of cases except possibly in their small groups of recurrent and prophylactically irradiated patients.

The follow-up portion of my study has not yet begun, but a casual survey of the 500 records being analyzed shows that 125 patients either died in the hospital or are known to have died after discharge. In the 300 records abstracted to date, 24 patients are dead and 78 others were discharged as beyond further treatment of any kind.

Dr. Garcia has mentioned certain aspects of carcinoma of the cervix which strike me as worthy of further discussion. One is the fact that the ideal treatment he describes is not always, indeed is not very often, carried out. One reason, at least in the period covered by my study, is the limited amount of radium then available; another is infection, extensive as it frequently is, can often be controlled by proper treatment, so that irradiation is eventually possible. More serious is the fact that so many of these patients, either from ignorance or for other reasons, such as residence out of the city, do not cooperate in treatment. They do not need hospitalization and cannot reasonably occupy bed space in the institution, but when they are dismissed from it they fail to return to the Department of Radiology for treatment or to the clinic for observation and no adequate machinery exists for keeping in touch with them or for bringing them back. As a result, they either die without further treatment or they return too late for any treatment to be of avail.

It is rather appalling to find that a few patients who returned to the hospital complaining of other symptoms, chiefly cardiac and orthopedic, were treated for them and that their cervical state was completely ignored. One woman, who was later found to have metastases to the sacrum and a frozen pelvis, was actually submitted to laminectomy for a supposed displaced intervertebral disk before the gynecologist saw her again. Certainly organization would seem to be the first principle in the treatment of cancer subjects.

In the 226 cases reported by the authors were nine instances of carcinoma of the cervical stump. In the 300 cases I have abstracted to date are 12

such instances. (In one case the operation was performed more than 20 years before the development of symptoms. In one or two others malignancy was unquestionably present when supravaginal hysterectomy was performed.) The routine performance of total hysterectomy in every practical case would seem to solve the problem of prevention in a small but definite group of cases of cervical carcinoma.

My analysis shows that the authors are entirely correct in their statements about the value of palliative irradiation. Many patients who had extensive disease when they were first seen and who are known to have died later or who were later dismissed as beyond further treatment exhibited remarkable local and general improvement after palliative irradiation and had more or less long periods of comfort. This is no small gain in a disease in which the outlook is so generally poor.

The most outstanding fact, however, which I have derived from the study of these 300 records is confirmation of the already established fact, of which so little practical use is made, that the problem of cervical carcinoma will never be solved until some means can be devised of bringing to the attention of, and ceaselessly impressing upon, all women of all races and social classes that any deviation from the pelvic norm, so to speak, is so dangerous as to demand the immediate attention of a physician. Among these patients were women who for months and even for years had tolerated foul vaginal discharges and bleeding, sometimes slight but sometimes approaching the hemorrhagic, and who had done nothing about it because they thought they were "having the change."

More damning from the standpoint of the medical profession is the group of women who did do something about it, who consulted their physicians promptly, but whose physicians either did nothing about it or did something wrong. Half a dozen of these patients were told that their symptoms were due to the menopause. Two were told that they had had abortions, although one of them insisted that she could not have been pregnant. One was treated medically for two years. Another—it must be granted that an initial biopsy was negative—was cauterized monthly for the same length of time. Obviously physicians, like patients, must be taught that vaginal discharges and irregular bleeding, no matter how slight, are abnormal and dangerous, no matter what the period of life. They must also be taught that while the taking of a biopsy is the first step on the road to salvation, reliance upon a single negative biopsy, in the face of continued clinical evidence of disease, will only add to the mortality of carcinoma of the cervix.

Dr. Leon Menville (New Orleans): While I am thoroughly familiar, as head of the Department of Radiology at Charity Hospital, with the methods of radiation therapy employed in treating carcinoma of the cervix, I wish to give entire credit to Dr. Garcia for his edifying report so splendidly

presented to us this evening. I am co-author of this report, but my being so is merely an incident through the graciousness of Dr. Garcia.

His presentation is interesting from many viewpoints. He was very modest and did not call to your attention the comparative survival rates of carcinoma of the cervix treated at Charity Hospital with those treated in other large medical centers of this and other countries. He also did not stress the fact that a great majority of these patients were colored and those of us who have lived in the South all of our lives and have practiced medicine here know the difficulty of handling some of these patients. They are as a whole notoriously procrastinators and invariably present themselves, particularly in cases of carcinoma of the cervix, when the disease is far advanced. Dr. Garcia's report is but another manifestation of what we have already heard in the past, that the practice of medicine in the City of New Orleans compares most favorably with that of other large medical centers almost anywhere.

In his group of cases he presented to you this evening, of 170 patients, 106 were colored and 64 were white. You perhaps noticed, from the slides he presented, that in the group of 64 white patients the survival rate period was 48 per cent. That is certainly a most encouraging situation. If you noticed carefully also on the same slide, you saw that there were seven patients that were in the early stages of the disease, all of whom have survived the three year period. If you observed again the slides which gave the combined results of both white and colored you noticed that in stage I group of patients, 81 per cent survived the three year period, and of group stage II, over 60 per cent survived in three years. It does seem but reasonable that we should have these patients present themselves for examination and treatment at least when they are in group II. I quite agree with Dr. Grafagnino that procrastination is not only on the part of the patient but also, too often perhaps, on the part of the physician.

To me this report is representative of an intelligent demonstration of a profound knowledge in the handling of an important subject—carcinoma of the cervix.

Dr. John R. Schenken (New Orleans): I would like to call your attention to the fact that Dr. Garcia failed to mention the histologic grade of the neoplasm. Perhaps you may feel that this should have been included in the discussion and that I as a pathologist should object to the fact that it was deleted.

Actually that is as it should be because the pathologist cannot tell you anything about prognosis from the histologic grade but the clinician can give much from the clinical grade.

Dr. Garcia's analysis of the results of treatment based on clinical grades amply substantiates this statement.

FUNCTIONAL UTERINE BLEEDING*

ROBERT J. CROSSEN, M. D.
ST. LOUIS, MO.

A discussion of uterine bleeding usually includes both the functional and organic types, but, since it would be impossible to cover both adequately in the time at my disposal, I felt that you would rather have me discuss the type most difficult to treat, namely, functional bleeding.

Detailed local, general and blood examinations will help to differentiate organic lesions such as polyps, myomas, and carcinoma from the functional or endocrine cases. Great strides have been made in the treatment of functional or endocrine bleeding, in fact the progress has been so rapid as to be confusing. From the maze of contradictory evidence, however, is emerging a clearer conception of pelvic physiology, which we all hope will aid us in treating the patient.

I am sure you are all familiar with the sequence of events occurring in the endometrium during a normal cycle and also that these cyclic variations are controlled by the pituitary ovarian teamwork. It is also now clear that a cyclic flow of blood indistinguishable externally from that of an ovulatory cycle can occur in the absence of ovulation and corpus luteum formation. In this latter type of bleeding the endometrium shows none of the usual premenstrual changes caused by progesterone; this type of flow has been designated anovulatory bleeding.

Less well known is the circulatory mechanism of normal menstruation, hence a brief review of these vascular events will, I feel, help us to understand some of the treatments used in controlling cases of functional bleeding.

In contradistinction to the behavior of endometrial glands, the cyclic vascular events preceding and accompanying menstruation appear to be similar, whether the bleeding follows an ovulatory or an anovulatory cycle.

There are two vascular symptoms concerned with menstruation; namely, those vessels in the uterine muscle wall which control the volume of blood coming to and circulating through the muscle wall, and, the vessels supplying the endometrium. The vessels in the endometrium concerned with bleeding are the coiled arterioles and the subepithelial capillaries. Our knowledge of these vessels has come from the experimental work of Markee and Daron. They studied the changes occurring in bits of endometrium which had been transplanted into the anterior chamber of the eye in monkeys.

The coiled arterioles arise from the arcuate branch of the uterine artery in the inner one-third of the uterine wall. They follow a radial course through the inner one-fourth of the uterine muscle, in which area there are constricting fibers called contraction cones by Markee. After leaving the musculature, the arteriole extends through the endometrium to its surface as an end arteriole. The distal portion of the arteriole and the pseudo-sphincter surrounding it are under control of the hormones and they atrophy if castration occurs; the proximal portion from which the new arteriole grows each month remains after the endometrium is cast off and is not under hormone control. The fundal portion of the endometrial glands has a vascular supply entirely separate from the coiled arterioles.

The vascular events accompanying the cyclic endometrial changes are as follows: Immediately after the endometrium is cast off with menstruation, new arterioles begin to grow into the newly regenerating endometrium. These arterioles grow faster than does the endometrium and hence become coiled. About 48 hours before the onset of menstruation the arterioles alternately dilate and constrict, giving rise to what is called the blush and blanche phenomenon. These alternate changes have been confirmed in the human uterus by hysteroscopic examination. Next the endometrium begins to shrink due to the withdrawal of estrin and progestin caused

*Read before the New Orleans Graduate Medical Assembly, New Orleans, March 17, 1943.

by the death of corpus luteum. This shrinkage causes excessive spiraling of the arterioles with a consequent stasis of the blood circulation in its lumen. Four to 24 hours before the visible onset of menses the arterioles dilate near the surface of the endometrium and extravasations of blood occur in widely separated areas, causing subepithelial hematomas, then there is a constriction of the coiled arteriole in the region of the pseudo-sphincter and this persists throughout the period though occasionally individual arterioles may relax for a short time. The actual bleeding results in several ways; namely, diapedesis, due to increased fragility of the capillary and arteriole walls, and spasmodic flow from temporary relaxation of a coiled arteriole. The endometrium crumbles and is cast off. The bleeding is then terminated by the establishment of an adequate new circulation after the main portion of the endometrium has been expelled.

The hormonal controlled rhythmic contraction of the uterine muscle also plays a part in controlling bleeding. The increased contraction caused by the estrin increases the volume of flow through the uterus while the inhibiting effect of progestin on the amplitude of contraction decreases the volume flow.

So much for physiology; reference to this knowledge will be made later under therapy but first let me discuss diagnosis.

DIAGNOSIS

This paper is concerned chiefly with functional uterine bleeding, hence an accurate diagnosis is necessary to separate functional or endocrine cases from those due to organic causes or blood dyscrasias. The importance of detailed local, general and blood examination as aids in this differential diagnosis cannot be overstressed. The quantitative blood and urine tests for ovarian and pituitary hormones are still not decisive enough to be of practical value in directing therapy. The determinations which will probably eventually be helpful are the pregnandiol test for progesterone, quantitative test for the various

estrogens, especially estriol, and quantitative tests for pituitary A and B.

From a clinical standpoint the premenstrual endometrial biopsy is still the most accurate index of ovarian function. Recent studies indicate that not only can ovulation be determined but also deficiency of the corpus luteum function is indicated by an incomplete premenstrual period.

With functional bleeding all patterns are found from a normal premenstrual endometrium, to an anovulatory type of interval or hyperplastic endometrium. The majority of the cases with functional bleeding show either an anovulatory type of endometrium or one in which the premenstrual changes are poorly defined, indicating that ovulation has occurred but that the resulting corpus luteum is defective or deficient in its output of progesterone.

Medicine will have to wait for future investigations to solve many difficult questions concerned with diagnosis and treatment of uterine bleeding. At present we are interested in what can be done for the bleeding patient with the knowledge we now possess.

TREATMENT

Before starting on specific types of therapy it is well to mention several general principles controlling the order in which treatment methods should be used.

1. The age of the patient is important; for instance, we prefer conservative treatment in young women, whereas in women over 45 radiation may be the method of choice.

2. Of importance is the amount of flow. If this is excessive and the blood loss is marked, curettage will be the first step. After the bleeding is controlled then investigation may be carried out to determine treatment. (Fatal menstrual hemorrhage has been reported in young girls.)

3. The economic status of the patient will arbitrarily limit the therapy to medicine which the patient is able to afford.

The order of treatment then in young girls and women in child-bearing age will be about as follows with variations as dic-

tated by the above mentioned conditions: (1) diet; (2) general endocrine therapy; (3) decreasing blood volume; (4) snake venom; (5) specific endocrine therapy—(a) chorionic gonadotropins, (b) anterior lobe extracts, (c) sex sterols; (6) curetage; (7) radiation; (8) radical operation.

In general it has been found in animals that reducing intake of food to one-third normal radically affects the pituitary and secondarily the ovary and thyroid.

1. *General Therapy*: A high protein diet, with oral fibrogen or arrhenoplectin if needed is used if the clotting time is found to be abnormally prolonged. Calcium is necessary in the blood clotting mechanism and is supplied in milk, cheese and dairy products. Regulation of diet as needed with special attention to an adequate supply of vitamins. Vitamin C was found to control capillary hemorrhage by Junghans. He treated 35 women suffering from menorrhagia with vitamin C, using 50 mg. doses intramuscularly twice daily. In 33 of these women the bleeding stopped in four to six days. He also found this treatment valuable in thrombopenic cases with uterine bleeding. Vitamin K has proved helpful in controlling bleeding in jaundiced cases and in hemorrhage in the newborn and may later be found to be successful in other conditions.

Foods high in iron are needed to help replace that lost and if enough cannot be taken in the diet additional iron should be given.

2. *General Endocrine Therapy*: Thyroid therapy should be given when the basal metabolism indicates a need for it. The basal is not always accurate as a guide to therapy but usually a grain of standard thyroid for a minus 10 of the basal will be adequate. If symptoms persist the dose may be increased cautiously using the patient's feelings and the pulse as a guide.

3. *Decreasing Blood Volume*: In atonic individuals the bleeding may be due to a lack of uterine tone and these are the women most frequently helped by ergotrate. The firm contraction of the uterus by compressing the deeper circulation diminishes

the volume of blood flow through the uterus and thus the amount of blood loss.

4. *Snake venom* has been used successfully in the treatment of functional bleeding by Goldberger and Peck. They reported relief in 17 of 20 women treated, and state that the expense of therapy is considerably less than it is with hormone therapy. The venom has a direct effect on the walls of the small blood vessels, making them more resistant to bleeding. The improvement in these patients extended from 20 months to four years.

Snake venom for bleeding: Method: given subcutaneously starting with $\frac{1}{2}$ c.c. and increase to 1 c.c. by the third day, then three times a week until controlled. As much treatment as possible should be given during the first ten days as patients develop a sensitization to the venom and must be desensitized before continuing therapy. Recently Peck has been able to separate the antigen of the venom from the factor active in controlling bleeding so that the undesirable sensitization action is eliminated.

5. *Hormone Therapy*: Of the hormones used there are three main groups from which to choose: (a) Chorionic gonadotropins; pregnancy urine, or pregnant mare's serum; (b) anterior lobe extracts; (c) sex sterols; estrogens, progestin, endrogens.

In order to avoid confusion I will discuss these in the order named.

(a) *Chorionic Gonadotropins*: (1) *Pregnancy urine*: antuitrin S, follutein, korotrin. The action of pregnancy urine on the control of bleeding is still not clear, it was formerly thought to cause luteinization and ovulation but this has been disproved in the human by Hamblen and Geist and others. It is probable that the effect is due to a direct action on the uterine muscle and to an indirect one through destruction of persistent ovarian follicles. Good results have been reported by a number of men.

Method: 100 units daily until bleeding is controlled, then 100 units every other day, starting seven days prior to the expected flow. This is continued through several

cycles and then the treatment is discontinued to determine if the patient needs more therapy to control the flow; if so it is given as needed.

(2) Pregnant mare's serum; gonadogen, gonadin, anteron. This preparation offers real hope of correcting the underlying cause in the anovulatory type of bleeding. Davis and Koff were able to cause ovulation in normally ovulating women at any desired time in the cycle, though they were not able to duplicate this in women having non-ovulatory cycles. There is considerable disagreement among workers at the present time as to the ability of this preparation to cause ovulation in non-ovulatory cases, but its success in some proved cases of non-ovulatory sterility suggests that it does cause ovulation in some cases.

Dosage: Gonadogen 20 units; gonadin 100 units; anteron 100 to 200 units. One of these is given intramuscularly, 50-100 units daily from the fifth to twelfth day of the cycle. Sevringhaus has reported excellent clinical results using this technic.

(b) Anterior Lobe Extracts: Prephylin, gynatrin. Hisaw and Fevold used this preparation experimentally and found that it contained F. S. H. and L. H. Sevringhaus has reported excellent clinical results in menorrhagia, and other endocrine disturbances.

Method: The cyclic therapy is used the same as with the pregnant mare's serum but it is not given as a rule intravenously. The dose is 50-100 units daily from the fifth to twelfth day.

(c) Sex Sterols: (1) Estrogens: estrone, estradiol, estriol, and the benzoated compounds; stilbestrol; (2) progestin: progesterone, pregneninonal (pranone); these two female hormones are considered together for it is by the combination of both used in cyclic therapy that control of bleeding is obtained. Hamblen found that bleeding in anovulatory patients could be stopped in three days by daily doses of 10,000-20,000 I. U. of estrogen. On cessation of treatment, however, the bleeding would recur in three to ten days. Progestin

given in the early phase of the cycle frequently caused the patient to bleed, and, if given during the flow it usually increased the flow. When, however, estrogen and progestin were used in the time relations as they act in a normal cycle, Hamblen, in a series of 12 patients, obtained 45 normal cycles out of 46 and most of these patients continued for months with normal cycles after the treatment was stopped. Hamblen also obtained good results using estradiol, estriol and pranone by mouth but at present the dosages required make the expense of this treatment prohibitive.

Method: The following cyclic therapy is used by Hamblen. First a cessation of bleeding is secured either by curettage or estrogen therapy as mentioned above. Starting one week after the cessation of the bleeding the patient receives 10,000-20,000 I. U. of estrogen daily for fourteen days, following which she is given 5 I. U. of progesterone daily for seven days or until the bleeding starts. A less expensive month therapy is stilbestrol 2-6 mg. daily until bleeding stops, then with the next few periods, 1 mg. daily from the fifth to the fifteenth day of the cycle.

(3) Male sex hormone or androgens; testosterone propionate; the action of this hormone in controlling bleeding is thought by some to be an indirect one through the inhibition of the pituitary, while others, notably Sturges and Abarbanal, feel that the action is a direct one on the uterine muscle, and on the muscle fibers constricting the coiled arterioles. The general action on the muscle inhibits rhythmic (estrin) contractions, thereby decreasing the volume of blood flowing to and through the uterus and the local action stimulates the myometrial elements about the arterioles, constricting them and thus helping to control the blood loss. Geist found that by mouth it was necessary to give 300-100 mg. M. S. H. to be effective. There are reports in the literature of undesirable effects such as hair growth on the lip, enlargement of the clitoris, deepening of the voice and other masculinizing effects from the use of the androgens. Abarbanal found no mascu-

linization in over 200 women treated with the androgens.

Intramuscularly the initial dose is 25 mg., then the same dose subcutaneously until the bleeding stops. With succeeding periods 5-10 mg. dose is given three times a week.

6. *Radiation:* The patients treated by radiation are divided into two main groups; women past the child-bearing period in whom the purpose is to stop menstruation entirely and women in the child-bearing group or young girls in whom the purpose is to regulate the menstruation. In the latter group it is well to try endocrine treatment first before resorting to radiation, as the menses are occasionally stopped permanently even by small doses of radiation.

7. *Operation:* In young women with bleeding severe enough to damage their health, hysterectomy is sometimes necessary. However, repeated curettments plus endocrine therapy should be used before resorting to this radical procedure.

SOME PRACTICAL ASPECTS OF HUMAN BLOOD PLASMA PREPARATION AND THERAPY*

J. W. DAVENPORT, JR., M. D.
NEW ORLEANS

(This report is based on experience gained in the operation of the Blood Plasma Service of the Southern Baptist Hospital during the past two and one-half years.)

Interest in human plasma therapy in the South received a great stimulus from the pioneer investigations of Silverman and Katz.¹ These were begun more than three years ago and added new and corroborative evidence to the safety and usefulness of properly prepared human blood plasma. The work of Silverman and Katz led to the establishment of the blood plasma laboratories in the Southern Baptist Hospital.

Human plasma has gained wide recognition as a valuable therapeutic agent. The general principles of its preparation are

well known to the medical profession. The clinician, however, is not so much interested in the minute technical details of plasma manufacture as he is in having the final product available in a safe and effective form for those of his patients who might require such treatment.

It is my purpose here to discuss some of the procedures of the plasma laboratory from that point of view and also briefly to review the clinical indications for plasma therapy.

Although frequently so used, the terms plasma and serum are not synonymous but are indicative of two substances differing in chemical nature and methods of preparation. These differences are summarized in table 1:

TABLE 1
DIFFERENTIATION OF PLASMA AND SERUM

PLASMA	SERUM
1. Prepared by mixing whole blood with an anti-coagulant such as sodium citrate.	1. Prepared by drawing blood into sterile container and allowing clot to form.
2. Cells may be separated by sedimentation (maximum yield 40%) or by centrifugation (maximum yield 57%). Fluid fraction is diluted by the anti-coagulant solution.	2. Clot must be separated by mechanical means and by centrifugation for maximum yield (about 50%). No dilution of fluid fraction.
3. Contains fibrinogen in solution.	3. Contains no fibrinogen.
4. Tendency to precipitate out fibrin particles on standing, especially in liquid state in refrigerator. Much less or no flocculation at room temperatures.	4. Does not form flocculi since all fibrinogen is removed during formation of the clot.
5. Contains prothrombin. Persists for two or three weeks at 6° C.	5. Prothrombin expended in formation of the clot.

Until recently plasma had been found to have a lower reaction rate than serum, the latter exhibiting considerable tendency to cause reactions of an anaphylactoid type when freshly prepared. This is probably due to the release of an histamine-like substance during formation of the clot.²

It has been known for some time now, however, that when properly pooled serum is allowed to refrigerate for four to six weeks it loses this property and becomes just about as reaction-free as plasma. It is the present consensus among serologists that the two products can be used interchangeably with about equal safety and

*Read before the Orleans Parish Medical Society, April 12, 1943.

benefit. However, most laboratories continue to make plasma rather than serum since it is technically easier to prepare and secondly because many hospitals depend on outdated banked blood as a source of plasma.

In this hospital we do not store whole blood since we feel that a blood bank is an unnecessary burden where an adequate supply of plasma is available. Also we consider that a better plasma can be obtained from fresh blood and that fresh blood is more beneficial where whole blood is indicated.

A plasma laboratory owes two duties to the physician and his patients. First it must make plasma always available. This it does by having patients send in replacement blood donors and by enrolling volunteer donors.

Secondly the plasma laboratory must manufacture its product under the highest possible standards of safety and purity so the quality of the plasma can be consistently maintained. These ends are achieved by efforts exerted in several directions: by careful selection of blood donors; by scrupulous cleansing and sterilization of all processing equipment and the maintenance of a completely closed processing system; by routine bacteriologic culture control; by proper pooling of the plasma; by providing suitable sets for safely administering plasma; and by maintaining complete and accurate records of all procedures. In brief, these are the major requirements established by the National Institute of Health for the processing of normal human blood plasma.

Obviously the blood donor must be in good health and free of diseases transmissible by blood transfusion. It is very desirable to have the donor's blood as fat-free as possible as excessive amounts of lipids in plasma not infrequently cause urticarial reactions in recipients. To avoid lipemia donors are requested to refrain from all fatty foods and beverages for six to eight hours prior to bleeding. They are, however, instructed to partake freely of non-fatty foods and drinks since we have found that

donors who do so show a much lower incidence of syncope following bleeding than those persons who have been completely fasting before bleeding. About 25 to 50 per cent of our donors disregard their printed dietary instructions and produce lipoidal plasma.

METHODS EMPLOYED IN MAKING PLASMA

In our laboratories we are now following two procedures in making plasma. Fatty plasma is routinely Berkefeld filtered following pooling and dispensed into final containers for storage at room temperature. Clear or fat-free plasma is pooled, dispensed into final containers and rapidly frozen and stored in that state. When needed it is rapidly thawed.

The Berkefeld filters, aside from performing their primary function of removing any bacteria present, also extract from fatty plasma 95 to 98 per cent of the lipids, thus rendering it suitable for use.

All plasma is routinely cultured twice, once after pooling and again by means of a pilot control when the final containers are filled. Animal inoculation safety tests are also done from time to time. For cultures we use the thioglycollate medium of Brewer³ which has the unique facility of growing anaerobes and aerobes in the same tube. To date we have experienced no contaminations of plasma, having processed about one-half million cubic centimeters.

It is considered desirable to add some bacteriostatic preservative to plasma. Most widely employed is 'merthiolate'-Lilly, routinely used in a 1-10,000 dilution.

One of the most useful attributes of properly prepared plasma is that it can be given to any patient without regard for the recipient's blood type. In 1940 Levinson and Cronheim⁴ demonstrated that antagonistic blood group agglutinins in pooled serum become inactivated and Davis⁵ in 1941 showed that the inactivation occurs on a quantitative basis.

It can be realized from this that it is possible to get a pool of plasma with a dangerously high titer of A or B agglutinins if the pooling were done indiscriminately. Davis and Meneely⁶ have calculated the prob-

ability of obtaining potentially dangerous pools of serum or plasma when pooling is done at random and have shown that the smaller the number of plasmas in a given pool the greater are the chances of that pool containing a predominance of one or the other blood group agglutinins.

The indiscriminate pooling of plasma is, therefore, to be strongly condemned, since it can produce a really dangerous product. A near-fatal reaction was reported by Polayes and Squillace⁷ in 1942 in which re-liquified dried plasma was found to produce marked agglutination of the recipient's red blood cells.

It has been our routine practice since the beginning of our program to type all donors and to make all pools of plasma contain an approximately balanced amount of plasma of each of the four blood groups. As a basis for this we use the incidence of the various types as found in nature, so that our pools, containing from 12 to 18 plasmas each, have in them approximate volumes of group plasmas as follows:

- Group O—40 to 45 per cent.
- Group A—40 to 45 per cent.
- Group B—10 to 15 per cent.
- Group AB—0 to 5 per cent.

This procedure has resulted in plasma which by extensive clinical test has been found to be safe and reliable. To this date we have not had an agglutination reaction from plasma in the nearly two thousand units processed in the Baptist Hospital.

STORING OF PLASMA

There are three ways to store plasma: liquid, frozen and desiccated. Liquid plasma is relatively inexpensive to prepare and is instantly available for use. National Institute of Health regulations permit storage of properly prepared liquid plasma at room temperature for one year from date of manufacture. Actually the material has been so stored elsewhere for considerably more than a year and used in over two hundred cases with beneficial results and a reaction rate less than one per cent.⁸

About one-third of our plasma for routine use has been stored at room temperature range of 70 to 95 degrees Fahrenheit for eight months and has been used with good results and no increase in our reaction rate of one-half of one per cent. Now, with the exception of a special reserve of plasma maintained for the Office of Civilian Defense in the frozen state, all of our plasma is stored in the liquid state at room temperature. This includes several units of plasma stored in various Louisiana and Mississippi towns supplied by our Mobile Unit Plasma Service.⁹

It is well to add about 5 per cent U. S. P. dextrose to plasma to stabilize the proteins. We also prepare and use a great deal of plasma diluted with an equal quantity of 5 per cent dextrose in normal saline.

In many respects freezing is the ideal method of storing plasma since freshly prepared frozen plasma retains all of its labile components such as prothrombin, complement and non-specific antibodies. Frozen plasma may be stored for three years from date of manufacture under N. I. H. regulations. When needed, it is rapidly thawed in a water bath or in a warm air blast.

Desiccated plasma is generally prepared by vacuum extraction of water vapor from frozen plasma and even on a large scale it is rather an expensive process as well as a prolonged one. Of course the military value of dried plasma, especially for field use, is self-evident^{10, 11}

It is our belief originally that liquid and frozen plasma would be entirely adequate for civilian use and our experience has confirmed this view. We have had considerable experience shipping liquid plasma throughout Louisiana and Mississippi and have thus far obtained very satisfactory results. No refrigeration is used.

CLINICAL APPLICATION OF PLASMA

Let us now consider the clinical applications of plasma, which is not really a blood substitute at all but an agent of definite and special therapeutic value in its own right.

TABLE 2
INDICATIONS FOR PLASMA AND/OR WHOLE
BLOOD THERAPY

(Adapted, with modifications, from Strumia and McGraw,
J. A. M. A., 116:2378, 1941)

Clinical Condition	Whole Blood	Plasma
Shock—little or no hemorrhage		Yes
Shock—severe hemorrhage	Yes	As an emergency measure
Burns	Contraindicated due to hemoconcentration	Definitely yes
Infections	Yes, when severe anemia is present	Yes, for non-specific immune bodies
Hypoproteinemias (Nutritional, Nephrotic, hepatic)	Not unless there is marked anemia present	Definitely yes
Cerebral edema		Yes, in undiluted or concentrated form
Blood dyscrasias (With hemolytic trends, low prothrombin, hemophilia)		Yes
Blood dyscrasias (With hemorrhagic trends)	Yes	
Acute poisonings (Affecting the oxygen carrying capacity of the blood, such as carbon monoxide asphyxia)	Definitely yes	
Anemias	Definitely yes	Yes, as palliative in hypoplastic forms

It can be seen from this summary that the clinical indications for plasma therapy are pretty clear-cut. Plasma does not play the important part it once did in the treatment of nutritional hypoproteinemias since the advent of amino acids for parenteral use. In the therapy of infections plasma is sometimes of value for its non-specific antibody content. However, freshly made plasma from a convalescent individual will often contain specific antibodies against the infecting organism.

I recently learned of one such case in the mid-west.¹² A patient was critically ill with tularemia, rapidly running a downward course. A tularemia convalescent was found and donated a pint of blood. This was immediately converted to plasma, diluted with

an equal amount of 5 per cent dextrose and given to the patient. Recovery was rapid and uneventful, the temperature returning to normal within 24 hours.

May I be permitted to place before the Society the suggestion that a convalescent serum center be established in New Orleans. There is abundant clinical material here and such a center would, I am sure, serve a highly useful purpose.

Recently we made some convalescent plasma from the blood of a patient who had recovered from virus pneumonia. The blood was obtained with the cooperation of Dr. Arthur Vidrine and of Doctors Waldo Treuting and Sherman Pinto of the Louisiana State Department of Health. The plasma was divided into two doses of about 125 c.c. each and carried to New Iberia and administered to two patients suffering from far advanced virus pneumonia. I regret deeply that this material did not seem to have any therapeutic effect whatsoever and the patients died shortly thereafter. Possibly if we could have gotten blood from several convalescents and pooled the plasmas we could have given massive doses of convalescent plasma and thereby saved the lives of the patients.

Dr. Katz recently told me that he has found normal human plasma a valuable adjunct in the supportive therapy of virus pneumonia.

Often to be considered is the amount of plasma to be given to an individual patient. We speak in terms of units of plasma, the unit generally being considered as 250 cubic centimeters of actual citrated plasma. Chemical studies made in our laboratory on Berkefeld filtered plasma in which the maximal fibrin precipitation had occurred showed the average protein content to be 5.6 grams per 100 c.c. Hence a unit of plasma as prepared here would contain 14 grams of protein, chiefly in the form of albumin and globulin. It is the albumin fraction of plasma which is responsible for 80 or 90 per cent of its therapeutic effect.

Because of its tendency to form fibrin flocculi, all plasma must be filtered at administration. Routinely used for this pur-

pose are the stainless-steel mesh filters employed for indirect whole blood transfusion. Glass tape filters also work very well where the fibrin is not excessive in amount. They have the advantage of being very cheap and therefore expendable.

One cannot formulate a general rule for plasma administration. Some patients in marked postoperative or postpartal shock will respond very well to the administration of one unit of plasma diluted with an equal quantity of saline. Where severe hemorrhage has occurred large quantities of plasma will of course be needed to combat the shock. Again a burned person may require several thousand cubic centimeters of plasma in 24 or 36 hours.

Of several clinical laboratory procedures of value in managing whole blood and/or plasma therapy the hematocrit and the serum protein determination (falling-drop) are probably the most useful since they are rapidly and easily carried out and produce significant information.

Harkins^{13, 14} has evolved a simple but very efficient means of calculating plasma dosage in burn cases, involving the use of the hematocrit. To quote: "the amount of plasma needed can be roughly calculated for an average-sized adult as being 100 cubic centimeters of plasma for every point the hematocrit exceeds the normal of 45, as long as the plasma proteins are above 6.0 grams per 100 cubic centimeters." An additional 25 per cent of the calculated dosage is added for each gram the plasma proteins are below 6.0 grams per cent. In practice this method works just as well as several much more complicated calculations.

SUMMARY

Human blood plasma has proved its worth in a multitude of cases, both in civilian and military medicine. The availability of plasma has often meant the difference between life and death for a stricken patient. In so many instances there is just no time to arrange a blood transfusion. To me the greatest value of plasma is its readiness for instant use.

REFERENCES

1. Silverman, D. N., and Katz, R. A.: Plasma therapy, *New Orleans M. & J.*, 94:178, 1941.
2. Silverman, D. N., and Katz, R. A.: Plasma transfusion, *Internat. M. Digest.*, 38:59, 1941.
3. Erikson, E. W.: Personal communication.
4. Brewer, J. H.: Clear liquid mediums for "aerobic" cultivation of anaerobes, *J. A. M. A.*, 115:598, 1940.
5. Levinson, S. O., and Cronheim, A.: Suppression of isoagglutinins and significance of this phenomenon in serum transfusions, *J. A. M. A.*, 114:455, 1940.
6. Davis, H. A.: Inactivation of group specific isoagglutinins in relation to transfusion of incompatible plasma, serum and ascitic fluid, *Surgery*, 10:592, 1941.
7. Davis, H. A., and Meneely, G. R.: Probability of obtaining potentially dangerous pools of human serum or plasma, *Science*, 96:468, 1942.
8. Polayes, S. H., and Squillace, J. A.: Near fatal reaction to transfusion with dried human plasma solution, *J. A. M. A.*, 118:1050, 1942.
9. Newhouser, L. R.: Personal communication.
10. Davenport, J. W., Jr.: The mobile unit plasma service of the Southern Baptist Hospital—a program for supplying human plasma to rural communities within 150 miles of New Orleans. (in preparation for publication).
11. Kendrick, D. B.: Prevention and treatment of shock in combat zone, *Mil. Surgeon*, 88:97, 1941.
12. Newhouser, L. R.: Paper presented at the 13th annual scientific assembly of the Medical Society of the District of Columbia, Sept. 30-Oct. 2, 1941.
13. Erikson, E. W.: Personal communication.
14. Harkins, H. N., Lam, C. R., and Romance, H.: Plasma therapy in severe burns, *Surg., Gynec. & Obst.*, 75:410, 1942.
15. Harkins, H. C.: *The Treatment of Burns*, Charles C. Thomas, Springfield, Ill. 1942.

DISCUSSION

Dr. D. N. Silverman (New Orleans): There is not much more to add; like the player who handed the other one the ball and he made the score—we gave it to Dr. Davenport and he ran for a touchdown on the plasma question.

Most of our experience in the use of plasma has been in gastrointestinal disease, especially gastrointestinal hemorrhage, acute and chronic gastrointestinal disorders. Dr. Davenport's work is certainly epoch making and my remarks are in appreciation of this wonderful work in cooperation with the medical profession and the unstinted time he has given to us.

In one instance, a physician had continuous gastric hemorrhage for six days and Dr. Davenport sent to me in relays, from his laboratory, a distance of 200 miles, as much as 20,000 c. c., or 80 units, of plasma, which I gave this doctor. He survived. In acute gastric hemorrhage, as seen in middle life, blood plasma has definitely decreased the mortality. Blackford of Seattle has shown, in a large series of massive gastric hemorrhage from peptic ulcer cases that hemorrhage lasting for a longer period than 48 hours, had a grave prognosis, especially is this true in cases of individuals past 50.

I believe we were the first to use plasma in certain severe gastrointestinal diseases, usually acute fulminating bacillary infection and colitis, where blood loss was often severe and where nutrition is greatly diminished. The question of protein de-

iciency may be present in instances where the blood analysis showed no hypoproteinemia. This had to be judged clinically since hemoconcentration accounts for the latter. Such examples of this phenomenon are acute peritonitis and intestinal obstruction associated with high fever. In such individuals, the red blood count is high, the pulse rapid, patient in shock, and in spite of the high protein level of the blood, one has the indication for emergency use of blood plasma. In other cases of plasma administration, we were able to gauge nutrition by studies of total proteins.

I want to say a few words about the administration of amino acids. I do not believe amino acids replace plasma administration in cases of massive hemorrhage with drop in blood volume, however, the amino acids (hydrolyzed protein) may be used to replace plasma in certain cases of mild chronic hypoproteinemia, as seen in bacillary tract disease and nutritional imbalance from dietary indiscretion, sprue, and certain other disturbances of the gastrointestinal tract.

Dr. Harry A. Davis (New Orleans): I have heard a great deal about Dr. Davenport's work at Baptist Hospital and know it is excellent. His paper is very complete and with Dr. Silverman's discussion it does not leave very much for me to say.

The interest which we have all seen during the past year or two in plasma makes it difficult for us to realize that the use of plasma and serum was introduced as far back as 1904. The first individuals to work on them were physiologists; Guthrie and Pike used serum in dogs. During the first World War, Robertson introduced its use in human patients and found it very satisfactory. During the thirties various Russian and French workers used blood serum and plasma, often using the terms interchangeably, and they obtained very good results. Most of the recent work in this field has been toward the large scale preparation of plasma and serum and you will notice that most studies are not concerned so much with the efficiency of plasma and serum but with details of preparation. These have been worked out. The general principle of preparation of this material is the use of the closed system. That has been very well pointed out by Dr. Davenport.

One of the difficulties of running a plasma bank is obtaining donors. This is especially true of a plasma bank in a charitable institution. This presents a particular difficulty at the present time owing to the fact that the American Red Cross is making, and rightly so, demands upon voluntary donors in this vicinity as well as in other vicinities. For this reason perhaps, many laboratories throughout the world are trying to find substitutes for human blood. So far no substitute that is really adequate is available. You have undoubtedly all heard of the recent work on the use of bovine blood and horse blood. Work of that nature is going on

at L. S. U. with use of the albumin fraction of bovine blood. The results so far have been promising but, as I have said, nothing is ready for any extensive clinical use.

Certain problems come up in the use of plasma which I should like to discuss. We all know, more or less, the indications for plasma which have been mentioned by Dr. Davenport. Are there any contraindications? Fortunately there are only one or two such instances. One true contraindication to the use of plasma is in shock associated with blast injury to the lungs and with cardiac tamponade. Under such conditions you should not use plasma for the simple reason that there is great tendency towards the precipitation of pulmonary edema.

The question of a convalescent serum center, as brought up by Dr. Davenport with the suggestion that one be set up, I think is excellent. Plans are being made at present to organize a blood plasma bank at Charity Hospital of Louisiana and I might say at this time that the question of the organization of a convalescent serum center as an adjunct of this bank is under serious consideration.

Finally, I should like to say a word about a form of human plasma not mentioned, namely, the use of human albumin. Cohn and his coworkers at Harvard have been working on this problem and have finally been able to obtain the albumin fraction from human plasma and serum. This fraction of course as you all know is the important fraction in plasma or serum, since upon it depends most of the osmotic pressure. It is possible by removing albumin fraction alone to obtain in a small 25 c.c. vial all of the essential parts of a unit of plasma. You can readily see the value of this, particularly on battle ships, where it has been used quite extensively, I understand. There is only one difficulty associated with the use of such a highly concentrated solution. It has been noted that following the use of this material hemorrhage may occur afresh, owing to the sudden rise of blood pressure following introduction of the material; a thrombus in a blood vessel may be blown out and bleeding started anew. A rule which should be laid down is that this material should be used only in circumstances under which immediate ligation of large vessels can be done if necessary.

Dr. Robert Katz (New Orleans): I was very pleased in one way to sit here and listen to the report of Dr. Davenport because it was my pleasure to do some of the early work with plasma after coming down here to practice gastroenterology from the University of Pennsylvania.

In the past three years, plasma has been accepted as a useful adjunct in both medicine and surgery. I can only add two very recent comments on the use of plasma in virus pneumonia and in atypical dysentery (virus?). Toward the last of Dr. Davenport's paper he mentioned the use of plasma in virus pneumonia. During the last week

of January, I was called over long distance by a physician, Dr. Y. Ardoin, from Evangeline Parish. He told me he had had five fatalities from a disease which began as a dysentery and subsequently developed into pneumonia, refractory to all sulfonamides, and that he presently had five patients desperately ill with the same condition. All of these patients were consecutive contacts—the first one, a lady who was visiting her son in Alexandria; the next patient a nurse that took care of the lady, the third another nurse. Altogether there were five deaths. On reviewing the charts the only thing that stood out boldly was the fact that these patients all had leukopenia and all had sulfonamides—plenty of them. The white blood counts were depressed in all. The supportive therapy was practically nil. My advice to the physician was simply to give plasma and supportive therapy, such as glucose, saline and no sulfonamides. Fortunately one unit of lyophilized blood plasma was available in ampoule. This was given to one of the patients whose case we had considered fatal. Twenty-four hours after leaving, I had a telephone call saying the patient who received plasma had shown a moderate drop in temperature. The others, with only supportive therapy, were much better. We sent twelve more units of dried plasma to the physician and all the patients received it. Now mind you, all were consecutive patients; all followed the original patient contacts. To make a long story short, everyone of these patients recovered. The administration of plasma to the patients affected a miraculous drop of temperature in almost twelve hours. Because of that particular finding the medical director of Sharp and Dohme, Dr. Earl Burbidge of Philadelphia, looked into the matter. I found out from him that the lyophilized plasma used in the above cases was made up from a pool of fifty donors. We may consider the possibility of antibody content in dried plasma. Antibody content probably is highest and deteriorates less in dried than in liquid form. This is perhaps illustrated by almost all biological preparations which are regenerated before use.

On returning to New Orleans, I discussed my findings at Hotel Dieu. Approximately one week after I returned to New Orleans, an epidemic of atypical dysentery (virus?) descended upon us. I had the privilege of seeing a large group of patients referred to me and almost the constant finding in these cases was leukopenia. We found blood counts ranging from 3,200 white blood cells, to 2,600. All stool cultures were negative excepting one in which Duval bacillus was isolated—a factor of questionable consequence. We were fortunate that none developed coughs because we have seen ill effects from sulfonamides. Lyophilized plasma to several of these very sick patients resulted in prompt remissions.

At the Graduate Medical Assembly session, Col. Allen spoke to me about the experience I have had

with the use of plasma in virus pneumonia. In the City of New Orleans we had several cases of virus pneumonia, characterized by high temperatures, 105 to 106, constant—not fluctuating. These patients showed immediate response to lyophilized plasma. There was an almost unbelievable drop in temperature. Col. Allen told me that he quite accidentally came across the same thing in a case of virus pneumonia with temperature of 106, noticing a prompt drop in the temperature to normal when plasma was administered.

Lyophilized plasma to my mind deserves further clinical trial in virus pneumonia characterized by hyperthermia and also in atypical dysenteries (virus?) such as we have seen recently. In my experience approximately 20 per cent of the atypical dysenteries showed fever while 80 per cent of the patients with virus pneumonia had temperatures about 203 F.

Dr. Elizabeth Bass (New Orleans): There is nothing I can add to Dr. Davenport's very excellent paper but I wish to congratulate him for having so thoroughly described a blood plasma bank and to commend the Scientific Essays Committee for having selected this timely subject for its program tonight.

As to safety and convenience blood plasma has proved to be a far cry from the earlier use of whole or citrated blood for transfusion.

It may interest the members to know that 26 years ago I presented the first paper on blood transfusion before this Society. I believe Drs. Bernadas, Bahn and Menville present here tonight heard the paper read. It was at the suggestion of Dr. F. W. Parham that I became interested in the subject, typed 55 patients and compiled a list of universal donors. Some of whom served as donors to patients of Drs. F. W. Parham, E. D. Martin, R. Matas, H. B. Gessner and others. To obtain sera for typing patients I wrote to Dr. W. L. Moss but my letter was returned because Dr. Moss had sailed with the John Hopkins unit for overseas duty. I then wrote to Dr. A. H. Sanford of the Mayo clinic who supplied me with Group II and Group III sera with which I was able to group my first patients. Dr. Sanford confirmed my own serum and sera from each of the four known groups. During the years that I typed recipients and donors I am happy to say there were no disastrous results but confess that I was always greatly relieved when all danger had passed.

Dr. J. W. Davenport (In closing): I have little to add except to say again that my presentation was based on the experience I have had at the Baptist Hospital. I tried to keep within the time limits prescribed by the rules of the Society and for that reason did not review the literature of plasma and serum work because the literature is so vast it would be impossible to review it adequately in one evening.

There is one other point and that is in reference to the work Dr. Davis and his group have

been doing on blood substitutes from animals: bovine plasma and albumin. I think the day is coming when those substances will make the present human plasma banks of historical interest only, some day it will come, I am sure probably in five or ten years or even much sooner. When that time comes and human plasma banks have passed from existence, we will at least be able to say that they have served a useful purpose.

LUMBAR HERNIA

ROBERT KAPSINOW, M. D.
LAFAYETTE, LA.

Lumbar or lateral hernia constitutes one of the rarer groups of hernia encountered. A recent case served as the incentive to an investigation of the literature which strangely seems to have been very prolific prior to the year 1900 but extremely infrequent ever since. The bulk of the early writings dealt chiefly with a description of lumbar hernia.

A lumbar hernia is defined as a protrusion of the lateral abdominal wall anywhere between the costal margin and the crest of the ilium and posteriorly to the border of the latissimus dorsi. According to Kelton¹, Barbette, over 400 years ago, was the first to mention lumbar hernia by description. Excluding the type of lumbar hernia that follows infection from kidney or ureteral surgery, the majority of the 116 cases recorded are divided chiefly into two groups according to location. These anatomic locations are called Petit's triangle and Lesshaft or Grynfelt's space.

Petit's triangle is bounded at the bottom by the crest of the ilium. The lateral border is the edge of the latissimus dorsi and the medial border is the external oblique. The floor is composed of the internal oblique.

Grynfelt or Lesshaft's space is bounded by the twelfth rib above, the quadratus lumborum laterally and the external oblique medially with the internal oblique forming the floor.

Two other supposed sites of exit from the lateral abdominal cavity are mentioned, namely a defect in the aponeurosis of the latissimus dorsi described by Braun and another inconstant defect near Petit's triangle but posteriorly, mentioned by Lieber and Hartmann.

Lumbar hernia may be congenital; traumatic—either direct or indirect; following infectious processes or sinus formation; or incisional as following kidney or ureteral surgery.

The congenital type is due to a malformation either in the course of the lumbar muscles or in their absence. The sac may be formed of parietal peritoneum alone, together with the cecum if on the right side or the descending colon if on the left side. The sac has never been described as attached to the skin. Congenital hernia may be found at any of the sites described.

Hernias due to indirect trauma are the most numerous. They are due to excessive straining either sudden in character or over a long time, whether in coughing, lifting or pushing, or any other type of exertion which increases the intra-abdominal pressure. Of the 33 cases reported by Goodman and Speese², 14 were produced in this manner. In most instances, the hernia appeared shortly after the injury. Hernias following direct trauma are usually severe and shocking. Few cases of this type have been reported.

Infectious processes such as tuberculous abscess of the spine or incisional weakness following surgery are self explanatory, and are not included in this paper.

In the records studied, the majority of the cases in which age is mentioned, all but five were over 40 years of age. This factor would seem to exclude a congenital predisposition as a cause. There seems to be a general predilection of the hernia towards the left side, there being 10 cases recorded as occurring on the right and 19 on the left. Lumbar hernia occurred most frequently in males.

The hernia is generally subcutaneous, being separated from the skin by a layer of fat or thinned muscle. Usually there is a sac, although in some cases a sac as such is absent. If present it consists of peritoneum covered by pre-peritoneal fat. The contents are readily reducible because the neck of the sac is as large as the diameter of the sac. These contents may be cecum on the right or descending colon and omen-

tum on the left side. Rarely has the kidney been reported as present.

The symptoms are usually dependent upon the rapidity of its formation. In many cases, except for the protruding mass, the hernia causes no symptoms. A dragging, pulling feeling is often complained of. In the case being reported, the patient was annoyed by the explosive protrusion of the hernia every time he coughed, as well as an aching in the side whenever he strained in his work which was difficult and laborious.

In the matter of diagnosis, it must be differentiated from tuberculous abscess of the spine. Cases have been recorded in which the hernia was incised mistakenly and the bowel opened with resultant catastrophe.

The repair of lumbar hernia surgically is uniformly successful, although the number of operatively repaired cases is comparatively small. In many instances comfort is obtained with a truss or belt, since the contents are so easily reducible and besides so many of the individuals with lumbar hernia are advanced in years. However all patients that have any distress should be submitted to operation as the hernia can be repaired under local infiltrative anesthesia.

The surgical technic used in the repair of a lumbar hernia in Petit's triangle was described by Dowd³ in 1907. Dowd made a vertical incision over the hernia and then separated the sac from the enveloping fibrous tissue surrounding the hiatus. A portion of the sac was excised and closed. The margins of the external oblique and latissimus dorsi were sutured together as far as possible. After this was done, a flap of aponeurosis covering the gluteus maximus was raised and fixed to the sutured muscles.

In the case presented a transverse incision following the crest of the ilium was made. The pre-peritoneal fat was easily distinguished and separated from the subcutaneous tissue. The sac was freed from the fibrous opening through the defective muscles. It was opened and explored and closed in the regular manner of closing the peritoneum as there was nothing in it ex-



Fig. 1. Anatomic relationship to the line of incision: 1. Border of the lowest rib. 2. Medial border of the latissimus dorsi muscle. 3. Line of incision. 4. Crest of the ilium.

cept that when the patient strained the sigmoid bulged into the wound. The transversalis fascia and internal oblique were freed and brought down and fixed to the fascia on the inner margin of the iliac crest. It was possible to suture the external oblique to the latissimus dorsi, covering nearly two-thirds of the defect. A triangular section of fascia covered by subcutaneous fat was raised opposite the defect from off the gluteus maximus and swung as a lid over the crest of the ilium and sutured to the defect.

CASE REPORT

Mr. J. P., a white male, aged 48, experienced a pain in the left side while dragging some electric light poles. He worked the rest of the day without difficulty but was constantly aware of pain in the left side. His history is negative in so far as injury is concerned. There was no history of sudden severe pain that required stopping from work. At no time was he nauseated nor did he vomit but continued to work without loss of time. The question of injury as a cause for his trouble never occurred to him. It was only when he was examined for constipation, which he assumed was the cause of his trouble, that the left lumbar hernia was found.

At the present time he suffers from a dull aching pain in the left side which is accentuated on lifting or straining and coughing. Coughing causes most

of the pain because of the sudden expulsion of the hernia.

Physical examination revealed a well developed and well nourished man in good physical condition, who weighed 170 pounds. Nothing of consequence was found other than a small right varicocele. On the left side of the abdomen over the crest of the ilium, upon inspection, was found a slight bulge located between the external oblique and latissimus dorsi muscles. Palpation revealed a weakness at this point and the tips of two fingers could be inserted and the margins of these muscles palpated. Coughing or straining brought out a definite pulsation, demonstrating the presence of a hernia into the defective area.

Laboratory findings were normal. X-ray examination was negative for old fracture, tumor or erosion of the ilium about the point of weakness.

Operative technic was carried out under local infiltrative novocaine anesthesia, using one-half per cent solution. The skin incision was made transversely across the hernia. The subcutaneous fat and fascia was easily separated from the preperitoneal fat. The neck of the sac, which consisted of a fibrotic ring about the edges of the external oblique and the latissimus dorsi muscles, was then freed. The sac was opened. A portion of the descending colon was visible but it was not adherent and easily displaced. The peritoneum of the sac was closed by a continuous suture of 1 chromic catgut. It was possible to bring the edge of the latissimus dorsi over and suture it to the edge of the external oblique. There was then left a small defect at the base of the triangle. A flap of fat and fascia was lifted from the adjacent gluteus maximus so that the superficial fat could be buried into the defect. With deep interrupted sutures containing the margins of the external oblique, transversalis fascia, latissimus dorsi and fascia of the gluteus maximus the residual defect could be closed snugly and without tension. Interrupted silk was used as a skin suture.

The wound healed per primam and the patient was allowed about by the eighteenth day. He returned to his work after the sixth week, wearing a belt, and when seen after 10 months the patient was found to be perfectly well. While it is still too soon to state that he will not have a recurrence, the modification of the approach to the repair of his hernia made of it a single procedure.

CONCLUSION

A review of the literature reveals that lumbar hernia is indeed a very rare type of hernia. In most instances it is caused by indirect injury usually in males and in adult life. It is most frequently recorded as appearing in the left side. The diagnosis should not be difficult, provided it is

thought of. A slight modification of the Dowd technic simplified the isolation of the hernial sac and the subsequent closure of the muscular defect.

1. Kelton, W.: Lumbar hernia, *Northwest Med.*, 38:127, 1939.
2. Goodman, E. G., and Speese, J.: Lumbar hernia, *Ann. Surg.*, 63:548, 1916.
3. Dowd, C. N.: Congenital lumbar hernia at the triangle of Petit, *Ann. Surg.*, 14:245, 1907.

—o—

THE EFFECT OF REPEATED LUMBAR PUNCTURES ON THE SPINAL FLUID IN NORMAL CHILDREN

LT. FRANK K. BAUER, M. R. C.*
New Orleans

There prevails the opinion among many physicians that the irritation caused by a lumbar puncture might give rise to a meningeal reaction characterized by an increase in cells at a subsequent puncture. This has been claimed to be true especially in infants and children. Merrit and Fremont-Smith¹ have performed repeated punctures without finding any such reaction except in cases where air, serum, or lipiodol had been introduced. These authors do not state, however, whether these punctures had been done in children or adults.

METHODS AND MATERIAL

Sixteen children from eight months to 15 years were subjected to two lumbar punctures, 48 hours apart. These children were in a good state of nutrition, afebrile and convalescent from conditions which would not affect the spinal fluid (table 1.) The interspaces between the third and fourth, or the fourth and fifth lumbar vertebrae were used; procaine was employed in all but the very small children. The pressure was taken with the patient lying down and the Queckenstedt manoeuvre carried out. Twenty c.c. of fluid were removed and a cell count and Pandy reaction done immediately.

*From the Department of Medicine, Tulane University, School of Medicine, and Charity Hospital of Louisiana at New Orleans.

This article was accepted for publication in *New Orleans Medical and Surgical Journal* prior to the entrance of Lt. Bauer into the Army.

TABLE I

Case	Name	Age	Col.	Sex	Convalescence From Disease	Appearance of fluid	Pres- sure	Cells	Pandy	Pro- teins	Chlo- rides	Sugar
1.	H. G.	8 mo.	C	M	Phallorrhaphy	Clear	170 220	0 0	0 0	20 22	755 748	55 48
2.	Y. R.	9 mo.	C	F	Eczema	Clear	100 120	2 4	0 0	62 52	710 680	59 50
3.	C. W.	10 mo.	W	M	Phallorrhaphy	Clear	150 155	0 0	0 0	40 32	700 686	52 40
4.	W. B.	12 mo.	C	M	Phallorrhaphy	Clear	120 160	0 0	0 0	18 15	728 700	50 48
5.	R. G.	12 mo.	W	M	Seborrheic dermatitis	Clear	110 125	0 3	0 0	36 34	716 718	68 65
6.	W. G.	14 mo.	C	M	Phallorrhaphy	Clear	175 190	4 1	0 0	15 15	728 710	57 43
7.	P. R.	-18 mo.	C	M	Phallorrhaphy	Clear	160 150	0 0	0 0	28 19	768 740	65 60
8.	O. J.	22 mo.	W	F	Old burns	Clear	100 125	0 0	0 0	26 24	780 732	62 59
9.	R. J.	26 mo.	W	M	Eczema	Clear	85 100	0 0	0 0	40 28	790 759	62 56
10.	R. P.	2½ yr.	C	M	Eczema	Clear	100 110	3 5	0 0	38 27	700 685	60 50
11.	W. P.	4 yr.	W	M	Parasites, (intestinal)	Clear	125 120	2 8	0 0	28 34	820 765	60 48
12.	W. R.	6 yr.	W	M	Hernia (preopera- tively)	Clear	140 170	0 2	0 0	26 24	780 765	58 50
13.	O. S.	8 yr.	C	M	Seborrheic dermatitis	Clear	100 85	2 2	0 0	38 30	760 728	62 48
14.	W. S.	12 yr.	C	F	Hysteria	Clear	125 150	0 0	0 0	28 22	824 731	66 62
15.	R. A.	14 yr.	W	M	Old burns	Clear	130 180	0 0	0 0	10.5 14	775 760	60 54
16.	B. T.	15 yr.	C	M	Psychoneurosis	Clear	160 195	3 3	0 0	60 48	738 735	50 42

diately following the procedure. Proteins, chlorides and sugar were determined by the usual methods. The pressure in some of the smaller children was sometimes inaccurate as the children were crying.

SUMMARY

(1) Sixteen children were subjected to two lumbar punctures 48 hours apart.

(2) There was no increase in cell count at the second puncture.

(3) In the older children the pressure was slightly elevated at the second puncture and the values for the chemical constituents lower, which would indicate an increased amount of spinal fluid due to the rapid rate of formation consecutive to the first tap.

REFERENCE

1. Merritt, H. Houston, and Fremont-Smith, Frank: *The Cerebrospinal Fluid*, W. B. Saunders Co., Philadelphia, 1938, p. 59.

ALBRECHT VON HALLER*

W. D. FUTCH, M. D.
NEW ORLEANS

It seems quite appropriate that we consider this personality in the history of medicine, for yesterday, one hundred sixty-three years ago, he died. Albrecht von Haller was born at Bern, Switzerland, on October 18, 1708. He was the fourth and youngest son of the attorney at law, Nicholas Emanuel von Haller. He is said to have been a timid, serious and weakly child. This fact may have had some bearing on his developing a versatility in language, poetic talent, an unusual industry in collecting facts and objects and his extraordi-

*Read before the History of Medicine Society, Tulane University.

nary power of observation. His early life reminds one much of the precocity of Milton's childhood. At the age of four, he explained the Bible, at the age of eight wrote a Latin satire on his old pedantic tutor, at nine had produced an extensive lexicon of all the Hebrew and Greek words in the Old and New Testament and had written a Chaldaic grammar, and at ten had compiled over two thousand biographies of distinguished personages.

In the year 1721, when von Haller was 13 years of age, he wrote an eulogy on the death of Frisching. In its title, the author calls himself a "poet who is a lover of virtue and a disciple of wisdom." This poem, although not showing the sentiment and perfect rhythm of his later efforts, is nevertheless genuinely poetic.

In 1722 he left Bern to become a student under the physician John Neuhaus in Biel. At that time, when young von Haller was 14, we are first told of his morbid inclinations. He was continuously sick, avoided his playmates and locked himself up in his room for months at a time. He consoled himself by writing and reading poetry in various languages. Besides writing an epic on the origin of the Swiss Union of States, he wrote several tragedies and translated Ovid, Horace and Virgil. Once while at Biel, he rushed into his burning house at great risk to save his mass of verse and literary compilation, only to burn them later.

The next year he went to the University of Tübingen. It was here that he first showed signs of breaking down the barriers between himself and the outside world. He entered mildly into the frivolous, merry life of the student and even describes the pretty ladies of Tübingen as being "by no means coy." He discovered, however, that Tübingen was not a place conducive to serious study, so in April, 1725 he went to Leyden to study under the renowned Boerhaave. It was at this time that he composed the beautiful hymn "Morning Thoughts", an apotheosis on the omnipotence of the Creator, which is undoubtedly

one of the most impressive poems in the German language.

When von Haller went to Leyden, Boerhaave was at the height of his power. Although Boerhaave made no discoveries or contributions to medicine, his wealth of experience undoubtedly laid the cornerstone around which all of von Haller's future works were based. At Leyden, von Haller met and worked under two other men of science, the younger Albinus, who was a shrewd and skillful anatomist and who in 1745 became Professor of Anatomy at Leyden, and Ruysch, who was von Haller's teacher at the age of 90. Von Haller received his degree in medicine in 1727 on the basis of a thesis in which he exposed the error of Coschwitz of Halle concerning a supposedly new salivary duct of the submaxillary and sublingual glands. Von Haller realized its true nature and correctly named it the lingual vein. After graduating from Leyden, he traveled extensively in England, where he became a favorite with the English men of medicine. He visited Belgium and Paris in 1728, and then went to Basel to study mathematics under Bernoulli. Two years later he returned to Bern to begin his practice of medicine. Here he continued his researches in physiology and anatomy, spending his leisure hours in noting down poetic inspirations and in making botanical explorations into the neighboring Alps. As time went on, he made a complete collection of Swiss flora and wrote a book on the subject which even today is considered to be a classic.

In 1736, when he was 28 years old, he had become already so famous that George II of England, who was also Elector of Hanover and Braunschweig, offered him the chair of anatomy, medicine and botany at the newly formed University of Göttingen. Von Haller accepted this position and remained at Göttingen for 17 years. It was while he was there that he carried out most of his important inquiries concerning medicine and compiling his literary work. While at Göttingen he founded the anatomic museum and laboratory, the botanical school and department,

and the obstetric department. He was one of the founders of the Göttingen Scientific Association and was the editor of its Commentaries. During his time at the University, he refused many calls to other more famous universities, noteworthy among which was a call by Frederick the Great to a chair at the Academy of Berlin.

At the age of 45, in 1753, he returned to Bern, partly because of illness and partly because of political ambitions in his Fatherland. He passed the remaining 24 years of his life in Switzerland, taking an active part in both municipal and state duties. The height of his political career came when he was elected a member of the great National Council of Switzerland.

We know very little of von Haller's home life. We do know, however, that he was married three times. His deeply conceived eulogies on the occasion of the death of his first and also on that of his second wife, were evidences of his intense feeling.

Toward his latter years, von Haller became addicted to opium as a result of its use to relieve severe persistent pain. We are led to believe that he was a victim of cancer. He died on December 12, 1777. His last words, spoken to a friend at his bedside, with his fingers on his own pulse, were "the artery no longer beats."

His extraordinary versatility as a poet, litterateur, political economist, botanist, physiologist, physician and surgeon has been the wonder of his biographers. Von Haller's versatile genius reveals itself best in physiology. Before his time there never existed a complete treatise on physiology. Between 1759 and 1766 he published his great work *Elementa Physiologiae Corporis Humani*, in eight quarto volumes, which established modern physiology and earned for himself the title of father of physiology. In the preface of the sixth volume of the *Elementa*, he gives a list of which he claims to be some of his personal discoveries. He doubtlessly correctly recognized the mechanism of respiration and peripheral circulation, and his researches on the "formation of bone" and "develop-

ment of the embryo" are of greatest importance.

In 1728, when von Haller was 20 years old, he made an extensive trip through Switzerland. This experience affected him so much that in the following year he put his impressions in poetic form in the poem called "Die Alpen". In this work he compared with biting sarcasm the low morality of the dwellers of the cities with that of the old Swiss type who were true children of nature. Several years later, however, he reverses his ideas concerning these Alpine children of nature, for it becomes evident that he had transported himself in his poetic zeal to a beautifully conceived past, or to a place that existed only in his imagination. Supplementing this sentimental bias and pessimistic view of civilized life, however, von Haller had a practical, common sense view of nature on one hand, and an effusive religious optimism on the other. Like Leibnitz and Pope, he believed that "Everything that exists is good and for the benefit of humanity."

Von Haller's entire poetical works are contained in one small volume. This is a great contrast to the cluster of Germanic poetasters of that period who were of the "quantity not quality" variety. In von Haller, a serious, philosophic poet had made his appearance. He was the first to bring force and depth to German poetry; however, he did nothing to bring about the ease of expression that characterized the later poets of the German language. Emanuel Kant refers to him as "the most sublime German poet."

When it came to regarding life from a pleasant point of view, Haller was lost. This was entirely foreign to his grave nature. Being inclined to loneliness, reserved and sensitive, lacking resiliency to experiences of a disagreeable nature he kept himself aloof from a real understanding of the joys of youth.

As a professor at Göttingen, Albrecht von Haller soon became famous throughout Europe as the "Great Haller." The Academy of Berlin sought him, but the free-thinking tendencies of Frederick's court

were distasteful to the pious Christian. Being possessed of a gigantic intellect and immense learning, he devoted himself with untiring efforts to scientific study. Histories of botany, physiology, anatomy and surgery each give him a great share of honor. He was an encyclopedia of information; wrote for many years reviews of books related to all departments of knowledge, at one time appearing in the role of a theologian, at another as a politician, and in his last period became a statesman and administrator of public affairs. He, more than any other man before or since him, did more to rehabilitate the poetic and scientific fame of Switzerland, his Fatherland.

THE FUNCTIONS AND SERVICES OF THE LOUISIANA STATE BOARD OF HEALTH

LOCAL HEALTH SERVICES

This division is purely administrative and functions so that health services rendered over the state to the public are co-ordinated and standardized. The principal duties are:

1. Organization of local health units.
2. Co-ordination of public health programs on a local level.
3. Supervision of the administration of local health units.
4. The recruiting, training and assigning of personnel in co-operation with the Divisions of Public Health Engineering and Public Health Nursing.
5. Furnishing technical field advisors for consultant service on technical procedures to local health personnel.
6. Selecting and assigning health unit personnel who, in turn, organize and administer public health programs on a local level.

ADMINISTRATIVE SERVICE

The functions of this division are:

1. Financial budgetary accounting, including the receiving of and control of all

incoming cash, audits of all payrolls and other expenses, and the disbursements of all funds.

2. Control of purchases and maintenance of Central Supply Office, messenger, printing and mailing services.

LABORATORY SERVICE

Laboratory services are maintained for the benefit of the communities throughout the state and include the examination of:

1. Blood specimens for the sero-diagnosis of syphilis from selectees, members of the various branches of the armed forces, expectant mothers, food handlers, industrial employees, those suspected of having the disease.
2. Human blood specimens for diagnosing fevers.
3. Blood smears for malarial parasites.
4. Spinal fluid for cell count, Wassermann, colloidal gold, globulin, smears and cultures.
5. Material from suspected lesions for syphilis (darkfield).
6. Smears and cultures for the diagnosis and control of infectious diseases from patients suffering or convalescing from infectious disease or their contacts to determine whether or not they are carriers.
7. Smears and cultures for gonococci.
8. Sputum and other material for tubercle bacilli.
9. Stools for the presence of ova, parasites or cysts from food handlers, pre-school, and school children, and persons suspected of harboring parasites.
10. Stools for the presence of typhoid-dysentery group from patients suffering or recovering from the disease; and food handlers.
11. Urinalyses (chemical and microscopic).
12. Surgical and autopsy tissues.
13. Foods, drugs and cosmetics (chemical and bacteriological) to determine their legality.
14. Foods, drugs and cosmetics for the purpose of accumulating data to arrive at

*Reprinted from a bulletin issued by the Louisiana State Board of Health.

legal standards (chemical and bacteriological) and to improve control methods.

15. Foods, drugs and cosmetics for research purposes (chemical and bacteriological).

16. Water and sewage (chemical and bacteriological) as related to public health.

17. Milk and milk products (bacteriological and chemical) from dairies within the state and from those shipping milk for use in the state, milk plants, and distributors.

18. Shell fish, food and food products (bacteriological and chemical).

19. Animals for plague, typhus, rabies and animal blood for anthrax and undulant fever.

20. Toxicological specimens (chemical and bacteriological) to determine presence or absence of poisons.

21. Preparations of biologicals: typhoid vaccine, sterile distilled water, antigens, hemolysin, antisera.

22. Distribution of containers for collection of specimens, culture media, data forms.

This division supplies technical information and advice to other divisions regarding chemical and bacteriological problems related to public health.

PUBLIC HEALTH ENGINEERING

This division has supervision of all activities dealing with environmental sanitation, including water supplies, sewage and waste disposal, rat-proofing, and malaria-mosquito control drainage projects; as well as the administration of food and drug control.

Among its principal functions and duties are:

1. Supervision of public water supplies and supplies of common carriers engaged in interstate commerce. This involves periodic inspection of supplies, review of plans for new water supply systems; and the receipt and proper handling of laboratory reports on the examination of water supplies.

2. Promotion and conduct of educational programs to assist water and sewer department personnel to discharge their duties properly.

3. Supervision of sewage and waste disposal and plumbing. This involves periodic inspection of sewerage systems and treatment plants; and the review of plans for new systems and for major additions to existing systems.

4. Supervision of the sanitation of swimming pools and recreational areas, including review of plans for new pools, inspection of existing pools, and educational training of pool operators.

5. Consultant services and supervision of rodent control, including rat-proofing and poisoning campaigns.

6. Review of plans for public institutions, jails, hospitals and schools.

7. Administrative supervision of the program for "Malaria Control in War Areas," which involves control of the malaria-carrying mosquito in areas surrounding military establishments and war industries; consultant service and aid to local communities in the planning and conduct of malaria control projects; administration of laws and regulations for control of mosquito breeding, including control of impounded water projects.

8. Administration of laws and regulations dealing with food, drugs, cosmetics, milk and milk products, soft drinks, and seafood. The giving of technical advice and assistance to local officials in the planning and conduct of local food control programs.

9. Preparation of educational leaflets on various phases of environmental sanitation; the establishment of standards of good practice, and of methods of procedure for the improvement of environmental sanitation.

10. Assistance and co-operation in writing and revising The Sanitary Code of Louisiana.

11. Co-operation with official and non-official agencies, particularly the: Drainage Basin Committee of the National

Resources Planning Board; State Stream Control Commission; State Nutrition Committee; Louisiana Civilian Defense Council; Division of Public Works, Streets and Buildings, New Orleans Civilian Defense Committee.

MATERNAL AND CHILD HEALTH

This division aims at the state-wide promotion of maternal and child health with a reduction of maternal and child mortality and morbidity by:

1. Directing and assisting in the development and improvement of medical maternity clinics providing ante-natal and postnatal medical care in parishes having full time health units.

2. Giving consultation service to nurses carrying on ante- and postnatal work.

3. Organizing of medical infant and pre-school conferences to afford continuous health supervision of the infant and pre-school child which includes his immunization against whooping cough, diphtheria and smallpox.

4. Promoting nursing care and continuous supervision of this group (infant and preschool).

5. Co-operation with the Division of Health Education and the State Department of Education in planning a school health program.

6. Maintenance of a maternal and child health demonstration in a rural area.

7. Developing obstetric consultation service to the state charity hospitals.

8. Providing refresher courses in obstetrics for practicing physicians.

9. Providing basic instruction to unlicensed midwives in rural areas.

10. Promoting and assisting in establishing and maintaining standards for foster care of children in institutions; to promoting, assisting in establishing and maintaining standards for obstetric and pediatric care in hospitals.

11. Promoting of education regarding maternal and child welfare to both lay and professional groups.

PUBLIC HEALTH NURSING

Functions of this division are:

1. Development of services rendered by Public Health Nurses in local communities.

2. Assistance in clinic, conference, school and home in the interest of communicable diseases, venereal diseases and tuberculosis control, pre-school, school and adult health supervision; and crippled children.

3. Assistance in promoting a generalized health program in every community.

4. Recommendation of standards of qualifications and performance of technical procedures.

5. Assistance in recruitment of qualified personnel.

6. The giving of technical guidance in all plans involving services of public health nurses.

7. Correlating of public health nursing with services of other agencies working for community betterment.

8. Furtherance of in-service staff education for nursing personnel as well as advanced study.

PREVENTIVE MEDICINE

The functions of this division are:

1. To effect integration of the services of the Sections of Epidemiology, Industrial Hygiene, Tuberculosis, Dental Health and Venereal Disease into a unified health program for the state.

2. To co-ordinate the activities of Louisiana State Board of Health by co-operating with all agencies and institutions on a local, state and national level.

DENTAL HEALTH

This section gives services that are both educational and corrective. The principal services are:

1. Operation of mobile dental units in those parishes that have full time health units.

2. Corrective services to a selected group of pre-school children from 3 to 5 years of age and the selected groups of children of the first and second grades in grammar schools.

3. Prophylaxis and dental corrections for selected groups of maternity cases that are known to the parish health units.

4. Dissemination of dental health education to adults and children.

5. Co-operation with the Public Health Education Committee of the Louisiana State Dental Society in the promotion of dental health educational and service programs as well as educational services to dentists.

6. Making available to school authorities and teachers knowledge regarding dentistry, recent advances in related sciences and proper use of local and state dental facilities.

PERSONNEL

The personnel office serves in a liaison capacity between the State Department of Health, the Merit System Council, and the Department of State Civil Service. The duties include:

1. Interpretation of the rules and regulations of the agencies concerned.

2. Negotiations of transactions with the state and federal agencies involved.

3. Administration of classification and compensation plans.

5. The making of recommendations to the State Health Officer on the selection of eligibles, promotions, salary advancements and all types of personnel status changes.

5. Conferences with representatives of the U. S. Public Health Service and Children's Bureau regarding the setting up of compensation, classification plans and rules and regulations for the operation of the Merit System.

6. Maintenance of personnel records on all persons employed in the agency and records of all personnel action.

7. The receiving of application forms from and interviewing of persons interested in employment with the department.

TUBERCULOSIS CONTROL SECTION

Tuberculosis case finding and early diagnosis to facilitate treatment by private physicians and public institutions and to

initiate public health control measures are the chief objectives of this Section. The services are:

1. Consultation service to parish health units regarding tuberculosis control, emphasizing the use of traveling and local clinics, and voluntary agencies.

2. Operation throughout the state of traveling chest X-ray unit, which studies tuberculosis contacts and suspects, food handlers, college students, high school teachers, industrial workers and maternity and venereal disease clinic patients when previous arrangements have been made by health units and proper authorities.

3. Supervision of the X-ray diagnostic units operated in connection with health units in Shreveport, Monroe, Alexandria, Baton Rouge, Lake Charles, Minden, Homer, Winnfield, Tallulah, Winnsboro, Natchitoches, Leesville, Crowley, New Iberia, Opelousas, Covington and Gretna.

4. Reading of all chest films from the above units (except Shreveport) as well as consultation reading for private or institutional physicians and the New Orleans Health Department.

5. Active co-operation with the Department of Institutions regarding applications for tuberculosis sanatorium care.

6. Assistance and consultation to Division of Education and the voluntary tuberculosis agencies in conducting tuberculosis control educational programs.

7. Lectures to L. S. U. Medical and Graduate Welfare students, nurses being trained for public health work and to Negro physicians at Flint-Goodridge Hospital in New Orleans.

8. Co-operation with selective service medical personnel for further study and supervision of selectees rejected because of chest findings.

NUTRITION

The nutrition program is necessarily educational in nature. It includes:

1. Orientation lectures in nutrition to nurses and other trainees.

2. Preparation and publication of nutrition materials and literature for general distribution.

3. Close co-operation with the Division of Maternal-Child Health for education of mothers before and after the birth of their babies, for infant and preschool feeding; with the Department of Education for nutrition of the school age children both through teaching and the lunch program; and with the Division of Crippled Children for aid to the children in need of special advice regarding foods and nutrition.

4. Co-operation with teacher-training institutions and lectures to L. S. U. graduate social workers.

5. Education at the community level by talks, written articles, exhibits and close co-operation with all parish nutrition committees. Chairmanship of the Steering Committee and the Publicity Committee of the State Nutrition Committee.

INDUSTRIAL HYGIENE

This section has been established to study and help in the control of those conditions in industry which may injure the health of workers. Its services include:

1. Medical studies, in co-operation with private or industrial physicians, of workers who are thought to be suffering from sickness as a result of exposure to processes or materials used in manufacturing.

2. Examination of air in industrial plants to determine the concentration of harmful dusts, gases, vapors, fumes, mists or sprays present in the atmosphere of workrooms.

3. Recommendation of methods for the control of industrial health hazards.

4. Investigation of new industrial processes and materials to determine what their effect will be on health.

5. Aid in establishing adequate industrial medical services which are of benefit both to the worker and to the industry.

6. Assistance in making the facilities of the State Health Department available to every employed person.

VENEREAL DISEASES

Functions and services rendered by this section are:

1. Operation of 141 venereal disease clinics throughout the State where free medical service is available to indigent patients.

2. Provision of trained epidemiologic investigators to these clinics.

3. The supplying of free drugs for the treatment of all venereal diseases to all venereal disease clinics, private physicians and institutions.

4. Medical and epidemiologic consultative service to clinics, private physicians and institutions.

5. Co-operation with military, naval, state and parish authorities in tracing and bringing under treatment patients infected with venereal diseases.

6. Co-operation with the selective service boards in serologic testing of all selective service registrants and in tracing and bringing to treatment those found infected with venereal diseases.

7. Provision of hospital facilities for the treatment and vocational re-direction of selected groups of venereal disease patients.

8. Evaluation of the performance of serologic tests for syphilis in military, private and industrial laboratories in the state.

9. The correlation, tabulation and analysis of medical and epidemiologic activities in the state venereal disease clinics.

10. Co-operation with the Division of Public Health Education in promulgating venereal disease education.

COMMUNICABLE DISEASES

This section is planned to control disease by:

1. Improving the reporting of communicable disease by physicians and other attendants, an obligation required by law.

2. The verification of diagnoses of communicable diseases by physical and laboratory examinations.

3. The institution of measures for the control of communicable disease: isolation and quarantine of cases and contacts when

necessary as well as artificial immunization of susceptible contacts whenever possible.

4. Programs for immunization.

5. The examination of food and milk handlers for communicable disease to prevent the contamination of these foodstuffs.

6. The collection and analysis of statistics on disease incidence by localities and by state.

7. The maintenance of a register of disease incidence.

8. The organization and conduct of special studies on communicable diseases.

9. Co-operation with the Division of Laboratories in procedures concerning the diagnosis and control of communicable diseases.

10. The preparation of educational material for public health workers, other professional workers and the lay public in co-operation with the Division of Public Health Education.

DIVISION OF CRIPPLED CHILDREN SERVICES

This division aims to locate and render medical or surgical service to children inhibited by physical defects which cause crippling. The most modern methods known to medicine and surgery are employed. Children up to twenty-one years of age, whose parents are unable to pay for treatment and care, are accepted. The Crippled Children Division renders the following services:

1. Itinerant orthopedic field clinics—located geographically so that all parishes may be served at least once a year.

2. Monthly orthopedic clinics at Shreveport, Monroe, Lafayette, Alexandria and Baton Rouge.

3. Weekly orthopedic clinics at New Orleans.

4. Diagnosing and treating children in clinics.

5. All cases requiring surgical or other treatment are hospitalized in Shreveport at the Tri-State and Charity hospitals in New Orleans at Touro Infirmary, Baptist and Flint-Goodridge hospitals.

6. The Kenny treatment of infantile paralysis is given at Charity Hospital, New Orleans.

7. Medical social service and nursing follow-up during care.

8. Consultant service is offered to private physicians.

Before final disposition of any case, the orthopedic surgeon recommends concerning placement with Division of Vocational Rehabilitation.

PUBLIC HEALTH STATISTICS

This division is concerned with vital data—births, deaths, marriages, divorces and sickness, and comprising collection of data, tabulation of these data and analysis and reporting of known facts. The collection of data includes:

1. Current birth, death and stillbirth registration.

2. Delayed birth registrations in accordance with War and Navy Departments' procedures through U. S. Bureau of the Census. The applicant must submit documentary proof of facts of birth, each fact to be supported by *two* documents if at least one document is made and dated prior to registrant's 4th birthday or *three* documents if none was made and dated prior to 4th birthday. Each of these latter documents must be at least five years old.

3. Current marriage and divorce registration.

4. Reportable diseases data.

The punch card method is used for tabulating data.

The analysis and reporting include:

1. The issuing of certified copies of birth and death certificates. Fee for certified copies filed at time of birth, \$.50; of delayed birth, \$1.00; of death, \$.50; notifications of the registrations of births and deaths are free.

2. Preparation and issuance of monthly and quarterly reports for other Divisions of the Board of Health, local health units and governmental agencies.

Two trained consultants are available to any health unit upon request.

This division is a service bureau for other divisions, local health units and for any individual who desires statistical data regarding public health.

HEALTH EDUCATION

This division is one of co-ordination and administration. Its functions are to help the public understand and use the services of the different divisions in the State Health Department. The division co-operates with the State Department of Education, the State Department of Welfare and other state and federal agencies. The services include:

1. Publication and distribution of Quarterly Bulletin, Trends (a monthly publication), News Letters, and Biennial Report.
2. Conducting programs of educational films for schools, institutions and communities.
3. Helping to develop rural community health projects in co-operation with the State Department of Education.
4. Giving consultant services to schools in further planning and developing the health educational program.
5. Co-operating with teachers' colleges in developing health services and the teaching of health.
6. Sending out news releases, arranging weekly radio programs as well as other publicity.
7. Arranging exhibits for State and Parish fairs and special days during conventions.
8. Addressing various groups throughout the state.

Buy
U.S. War Bonds

NEW ORLEANS Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

C. C. deGravelles, M. D., Ex officio
For one year: Lucien A. LeDoux, M. D., Chairman
H. W. Kostmayer, M. D., Secretary
For two years: James K. Howles, M. D.
For three years: G. C. Anderson, M. D.,
Vice-Chairman
Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D. *Editor-in-Chief*
Willard R. Wirth, M. D. *Editor*
Daniel J. Murphy, M. D. *Associate Editor*

COLLABORATORS—COUNCILORS

H. E. Bernadas, M. D.
J. T. O'Ferrall
Guy R. Jones, M. D.
T. B. Tooke, Sr., M. D.
George Wright, M. D.
Rhett McMahon, M. D.
C. A. Martin, M. D.
W. F. Couvillion, M. D.

Paul T. Talbot, M. D. *General Manager*
1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

MORE DOCTORS NEEDED

At a recent meeting of the Directing Board of Procurement and Assignment Service for Physicians, Dentists and Veterinarians it was brought out that there is an immediate need for 6,000 more doctors for the armed forces. These doctors are needed at once and immediately. It hardly seems fair to call upon the State of Louisiana to contribute more doctors than it has already done because this state is amongst the leaders in more than fulfilling the quota they were asked to give to the

Army, Navy and Public Health Service. Particularly is it unfortunate that the rather sparsely populated states are expected to give doctors when the civilian needs are such as they are, whereas the states that have given the fewest number of doctors proportionately are those in the North, and East where the number of doctors per unit of population is greater and where methods of practice are simpler. In more congested and populous states of the North and East towns are close to each other and one man can take care of many more patients than can another man who has to travel a long distance to get to his clientele.

In furthering the wish to obtain more doctors, a new step has been taken in their procurement. Army medical officers have gone into cities and towns and are proceeding to bring about the commissioning in the Army all interns and residents in the hospitals if they are physically fit. Not only do they seek the male physicians but likewise they are preparing to interview and consider seriously the commissioning of women doctors. Furthermore, the term of service for interns has been cut down to nine months.

The situation is serious. Doctors are needed for the Army but doctors are also needed to take care of the civilian population and to maintain hospitals. A given physician can see, treat and care for many more patients in a hospital than he can were these patients scattered here, there and everywhere. In very large hospitals it is absolutely essential that there be a certain number of residents who are on duty and on hand 24 hours a day. If these men are pulled out the quality of service will not only deteriorate markedly but there is also the possibility that it may result in certain services being discontinued entirely. The shortage of doctors is critical, both for the Army and for civilians. We medical men must take care of, and give the best possible service to our soldiers but the morale cannot be maintained in the soldier group if they know that at home their loved ones are suffering from inadequate medical care or even no medical care.

THE LOUISIANA STATE BOARD OF HEALTH

Elsewhere in this number of the *Journal* is published material that was distributed as a chart to the doctors of Louisiana relative to the functions and services of the Louisiana State Board of Health. This has been done deliberately with the idea that further emphasis should be laid on the services the State Board of Health is prepared to render physicians. It is felt also that possibly a certain number of doctors would put to one side the chart that was mailed to them and they would have neglected to read it.

There is a lack of knowledge on the part of many doctors of the state as to just what the State Board of Health is doing and what it is prepared to do. Most doctors are familiar with the functions of the local health services and what the parish health units do in their particular parish. Basically the local health services are the fundamental part of the program of the Board of Health. The activities of the State Board of Health center around the health units in the parishes where they exist, but many of these activities are so far removed from the ken of the physician that he may know in a general way what is being done but not the details.

To assist the physician in control of disease there are excellent laboratories throughout the state, with a central laboratory in New Orleans. In these laboratories the staff is prepared to make practically any kind of laboratory study that the doctor wishes to have done on specimens sent into the laboratory of patients who are unable to afford the cost of expensive laboratory methods. Not only are diagnostic procedures carried out, but also the laboratories are prepared to report on autopsy tissues, to examine food, drugs and

cosmetics, to determine the purity of water and milk and of shellfish and other food products. Vaccines are prepared, distilled water is to be had at the request of the doctor, as well as antigens and antisera.

One of the rather remotely separated divisions from the everyday activities of the physician is that of public health engineering which supplies consultant service in the control of mosquitoes, rodents and other vermin. This division has general supervision of all water supplies in the state as well as sewage and waste disposal. To this division is entrusted the administration of the laws and regulations having to do with food, drugs, cosmetics, milk and so on. This division in a quiet and unostentatious way carries out its share of the duties which enable the state to maintain the health of its citizens.

The maternal and child health division is in contact with the Federal government in maintaining and promoting maternal and child health. Amongst other of their activities have been in the past refresher courses given throughout the state in obstetrics and pediatrics to the practicing physicians. The public health nursing division has for its functions, nursing service to the clients of the health units as well as innumerable other duties, many of which have to do with the education of the general public. Parenthetically it might be remarked that the educational program of the Board of Health is extensive. The president of the Board of Health realizes and appreciates that it is only through the education of the ignorant that health measures may properly be carried out. It also should be remembered that the trained physicians of the State Board of Health are at the call of doctors at any time to assist them in their problems.

The functions of the division of preventive medicine have to do with coordination and integration of the sections which are under it. These sections include a section on dental health, tuberculosis control, nutrition program, industrial hygiene improve-

ment, venereal disease control as well as that of communicable diseases.

In the division of crippled childrens service is placed the care of the child who is unfortunate enough to be crippled and whose parents are unable to provide proper medical care. One of the newest undertakings of this division has been the setting up in the Charity Hospital, New Orleans, of a unit to carry out the Kenny treatment of infantile paralysis.

The division of vital statistics is an important division at the present time on account of the obligatory requirement of birth certificates for persons engaged in all war activities. This division records and maintains vital data; births, deaths, marriages and so on. The most modern statistical machinery has been improved for this division so it is possible now to obtain any information that is required in a comparatively few minutes. Thousands of dollars have been spent on equipment for this division and the results well merit the expenditures of these monies.

The president of the Louisiana State Board of Health, himself a practicing physician before accepting the present position, is willing at all times to be of assistance to the doctors of the state in any of their public health problems. He has always been a loyal member of organized medicine and he knows the difficulties of practice in both small and large communities, so that the Louisiana doctor can feel that he has, as it were, a friend at court.

—o—

CHRONIC SEASICKNESS

Lt. Commander Schwab,* in writing of this condition, notes that it is a disorder as old as any known disease. The Romans and Greeks mentioned it; Cicero and Caesar suffered from it and Lord Nelson was beset by seasickness most of the time he was at sea.

This condition is of great importance to the Navy. A sailor who is seasick when he is on a sea tour of duty will have his efficiency materially reduced; some sailors are so seasick that they are a liability rather than an asset to the crew. Efficiency is lowered not only by the nausea, vertigo and headache from which these persons suffer, but apparently there are lower degrees of sickness to motion which will affect the alertness, the skill, temper, and resistance to infection and emersion of these men who suffer from it.

A certain group of sailors who have seasickness may develop a psychoneurosis. They complain of many and multiple aches and pains, from the back, to the head, to the stomach. Some of the men when they are ordered to return to sea after living on shore, break down psychially completely and become totally useless for sea duty. Rather interesting that many of the complainers of chronic seasickness have abnormalities of the gastrointestinal tract. Some 50 per cent, according to Schwab, were discovered to have marked irritability of the pylorus and duodenum, pyloric spasm, lack of secretion and increase in the gastric rugae.

The implications of seasickness are many but just at the present when the Navy is at war these implications have largely to do with the efficiency of the men. At the present time the Navy is trying to keep out of the service those individuals who have suffered from motional sickness in the past, as picked up by a questionnaire. The men who have gotten into the service are sent to shore jobs "if their abilities warrant a retention in the service." This applies particularly to the men who have had extensive and expensive training, invaluable men as officers, physicians, radio engineers, signal men and so on.

In the Army the poorest soldier is the one who suffers from neurocirculatory asthenia. From Schwab's description of chronic seasickness evidently the poorest sailor or marine is he who suffers from chronic seasickness.

*Schwab, Robert S.: Chronic seasickness, *Ann. Int. Med.*, 19:28, 1943.

ORGANIZATION SECTION

The Executive Committee dedicates this page to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

The question of compulsory health insurance has been brought to the fore by issuance of the Beveridge report in England and the National Resources Planning Board report in this country.

The "American Beveridge plan" drafted by the planning board and recommending wide expansion of Government health service after the war, has aroused relatively little public interest in the United States, according to a recent Gallup poll. During the month after the plan was announced, only about one-third of those interviewed had heard or read anything about it, and only one in every eight was able to tell what the plan proposed, the survey showed.

To the question whether they had heard or read about the National Resources Planning Board, 66 per cent answered no. Of the 34 per cent who answered yes, fewer than half could recall anything about the plan's contents. The poll also indicated that the American public was more familiar with the British Beveridge plan than with ours. A similar poll conducted in Britain showed that nineteen out of every twenty voters had heard of the original Beveridge report.

In the United States a mild reaction has occurred against postwar planning. Certainly some of the programs have a ludicrous aspect, notably those which envisage an ante-bellum Utopia whose inhabitants lead lives rich in vitamins and leisure.

Whatever the advantages for the static industrial society in Europe, compulsory insurance has not found a uniformly appreciative audience in America. There is a general feeling that a more satisfactory solution to the problem of adequate medical care can be arrived at through other means.

The British Medical Association Council has gone on record as being opposed to

state control of doctors. It adopted a report recommending that while the state assume responsibility for the organization and provision of medical services, "it is not in the public interest that the state should convert the medical profession into a salaried branch of the central or local government service." The report was drawn up by a representative medical committee following discussions with Health Minister Ernest Brown on the problems raised by the Sir William Beveridge proposals for comprehensive health and rehabilitation services run by the state.

The health of the individual is the concern of society as a whole. Realization that all was not well with the health of the people was forcibly brought home to the nation when the first results of the medical examination of selectees were made known. These indicated that more than 40 per cent of examined men were being classified as unfit for general military service while more than one quarter were being rejected as unfit for any type of military service. The results of the selective service examinations should, however, have occasioned no surprise. In the last decade a great body of material has been accumulated, all of which points to the fact that if the health record of this country is, as is often claimed, the best in the world, the health level elsewhere must be low in the extreme. That among the objectives of postwar planning, enhancement of the health of the people must occupy a prominent position, is a foregone conclusion. If the health of the nation is to be raised to the level which existing knowledge now makes possible, it is evident that more of our resources must be invested in health activities.

It is a virtual certainty that postwar (or wartime) Washington will establish some kind of national health insurance program

unless medicine puts forward acceptable alternatives.

Despite transient cynicism about the value and function of broad planning, it seems that the profession has an urgent need to tackle this problem at once. Some steps have already been taken.

Real planning will neither delay victory nor impair the service we now render. And it is truly essential if we are not to be left holding the bag on demobilization day.

The statement by the National Resources Planning Board that, "It is essential that public provision be made for meeting the needs of our people for more adequate medical care. Toward this end the federal government should stimulate, assist or undertake constructive action to provide such care for the millions of our people whose need cannot be fully met from their own resources"—will provoke many a sharp controversy during the days ahead, within and without the profession of medicine.

However, the issue may not be brushed aside by those having any part of the responsibility for the leadership of postwar medicine.

In an article in the *Journal of the American Medical Association*, Dr. Wilburt C. Davidson says: "The main question facing the public and the medical profession today is not will medicine be socialized? but will socialized medicine be extended? And two questions that should be answered are, first, is the present system adequate for our needs? and, second, if not, will further socialization improve the situation?"

"The problem at present is not one of 'socialization' but whether the proportion between the various types of existing services shall remain the same."

Dr. Davidson defines socialized medicine as "any organized method by which adequate diagnostic and therapeutic medical service can be made available to all of the people, regardless of their ability to pay."

The American Medical Association is not opposing the two income groups in this country in their effort to secure good medical service at a cost they can reasonably meet.

It has endeavored to discover more suitable methods to assist these people to solve their medical problems. It does oppose the exploitation of the poor, and it is unalterably opposed to any scheme that would give the poor an inferior quality of medical care.

The medical profession today is conducting more social experiments in the methods of distributing medical services than all the proponents for change have ever conducted. Out of the two hundred and fifty or more projects that are being studied or operated by county or state medical societies, it is hoped that methods may be found to supplement existing medical facilities wherever necessity demands. These experiments in the distribution of medical care have been encouraged and studied by the American Medical Association and analyses of their advantages and disadvantages have been compiled by the Bureau of Medical Economics. The medical profession has opposed some of the methods of distributing medical service for the reason that experience has shown the impossibility of providing good and sufficient medical care under such arrangements. In other instances the proposals have met with medical approval as presenting the most satisfactory method thus far found to provide good medical care for the conditions or communities concerned.

"To proceed rashly without going through progressive stages will produce worse medical service than exists under the present system. Ill-considered and hasty legislation is as likely to be harmful as beneficial. Whether a generation will be necessary for the transition or a century, as in public education, only sound experiment and experience can tell."

Only so long as individual initiative is rewarded will American doctors and American people generally retain their present position of world leadership. If it is desirable to stop medical progress and to allow the health of the country to deteriorate, it can be accomplished no more easily than by subjecting the physician to a regimented routine and making a government servant out of him.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

AMERICAN FEDERATION OF CLINICAL RESEARCH, NEW ORLEANS SECTION

The following abstracts are of papers presented at the meeting of the Federation held at the Louisiana State Medical School, June 23, 1943.

Recent Advances in the Laboratory Diagnosis of American Trypanosomiasis. (Harry A. Senekjic, M. D.—From the Department of Tropical Medicine, Tulane University of Louisiana, New Orleans.)

Chagas' disease is confined to the Western Hemisphere, occurring in all the Latin-American Republics. In the Southwestern United States *T. cruzi*, the etiologic agent, is found in the mammalian reservoir vector, the assassin bug, but so far no cases of Chagas' disease are reported in man.

T. cruzi lives and multiplies in the leishmania stage in the reticulo-endothelial as well as in the parenchyma cells of almost all the organs, while in the trypanosome stage it occurs in the blood for a short duration. Such trypanosomes in the blood stream enter healthy cells and change back into the leishmania stage and repeat the cycle. If they do not, then eventually they are destroyed by the humoral and cellular defense of the host. Since the trypanosomes occur in very small numbers in the blood stream, the laboratory diagnosis is most difficult.

The pathology and symptomatology of the disease is very protean in the chronic and acute phases of the disease; therefore, the clinical diagnosis is difficult.

The accurate diagnosis is made by clinical laboratory methods, such as blood smear, culture of blood on hemoflagellate media, biopsy material of lacrimal gland and lymph gland, material obtained from bone marrow and splenic punctures, and xenodiagnosis in which laboratory raised trypanosome-free assassin bugs are fed on suspected cases, which show the trypanosomes in the hind gut and feces in 10 to 15 days.

Serologic methods are also used such as: "Machado" complement fixation test, using as antigen extracts of infected liver or spleens of puppies or cultures of *T. cruzi*; precipitin, agglutination, lysis reactions, and allergic skin tests are also used.

Trypanosoma cruzi contains a flagellar "H" agglutinin which is prepared by treating cultures with 0.3 per cent formalin, and giving rise to large flaking agglutination, which is loosely knit and has a tendency to settle to the bottom of the tube, leaving a clear supernatant fluid, and upon shaking the tube, the clumps break up into fine suspension. The somatic "O" agglutinin is prepared by treating cultures with 90 per cent ethyl alcohol. It gives rise to small flaking agglutination which is tightly knit and the clumps do not tend to settle to the bottom of the tube and

cannot be broken up into a finer suspension. As is the case with bacterial infections, similarly in *Trypanosoma cruzi* infection the titers for "H" agglutinins are higher than those for the "O" agglutinins.

The slide agglutination antigen is prepared by adding 0.5 per cent in physiologic solution to 20 day old cultures of the armadillo strain of *T. cruzi*, and the suspension is standardized to contain 100,000,000 trypanosomes per c. c. When, on a glass plate, equal amounts of the dilutions of infected serum and antigen are mixed, within three to five minutes a positive agglutination is obtained. The titers of slide agglutination and "O" agglutination are more closely correlated than the "H" and slide agglutination.

The skin test is performed by injecting intradermally killed cultures of *T. cruzi*. The reaction, which is positive in infected cases, consists of a wheal surrounded with an erythematous zone appearing in eight to twelve hours, reaching its height in 24 hours and fading away in three to five days.

One hundred and fifty Wassermann sera and eight cases of malaria yielded negative slide agglutination reaction. A case of undiagnosed fever gave a titer of 1:10.

Bone Marrow Studies at Various Sites of the Sternum in Blood Dyscrasias. (Philip Pizzolato, M. D. From the Division of Hematology, Department of Pathology, Charity Hospital of Louisiana at New Orleans.)

Through recent work with patients having pernicious anemia, Stasney and co-workers had shown that bone marrow taken at different sites of the sternum varied only slightly in quantity when determined by the Lamarzi technic and in the number of nucleated elements. It had been constantly emphasized by numerous workers that the volume of marrow removed should not be greater than 1 c. c. as more than this amount caused a rupture of the adjacent sinusoids and consequently a dilution of the marrow with plasma and red cells.

In this study, using fifteen patients, 0.5 to 3.5 c.c. of marrow were removed approximately 2.5 cm. apart, from the sternum on one to nine occasions and placed in bottles containing dry oxalate. On each sample the following studies were performed: Total nucleated cell count and quantity of fat, plasma, buffy coat and erythrocyte layers as obtained from centrifugalization in hematocrit tubes.

The fat varied from 0.0 to 26.5 per cent (pernicious anemia had the extreme); plasma, 10 per cent (chronic myelogenous leukemia) to 95 per cent (secondary anemia); buffy coat, 1.1 per cent (Feltz's syndrome) to 78.0 per cent (chronic myelogenous leukemia); erythrocyte layer, 1 per

cent (subacute myelogenous leukemia) to 46 per cent (chronic myelogenous leukemia); total nucleated cells, 12,200 (secondary anemia) to 628,000 cu. mm. (chronic lymphatic leukemia). In the majority of the cases when 1 c. c. was aspirated the results were fairly constant.

row was hyperplastic, hypoplastic or normal, the other sample was approximately the same.

In cases where 0.5 c. c. was taken, difficulty was noticed in aspirating and this might account for a greater variation. Occasionally a pocket of fat was punctured, resulting in a large fat layer

TABLE 1

Age, color sex	Diagnosis	Red cell count (mil- lion per c. mm)	White cell count (thou- sand per c. mm)	Marrow sample	Fat	Plasma	Marrow	Hematocrit	Total nucleated cell count (thousand per c. mm)
CM 21	Sickle cell disease.....	2.6	15.5	1.0	0.1	54.9	18.0	27.0	208.0
WF 43	Pernicious anemia	2.23	6.3	1.0	0.1	55.4	17.0	27.5	177.0
WM 44	Pernicious anemia	2.40	4.75	1.0	0.0	49.0	37.0	14.0	292.0
	Same patient five days later.....	2.44	5.1	1.0	0.0	40.0	26.0	34.0	96.0
				1.0	0.0	36.0	30.0	34.0	126.0
WF 26	Myelogenous leukemia	3.52	200.6	1.0	0.0	57.0	3.0	40.0	32.0
				1.0	0.0	60.7	2.5	36.8	19.0
WF 58	Lymphatic leukemia ..	2.37	6.7	1.0	0.0	16.5	73.0	11.0	416.0
				1.0	0.0	10.0	78.0	12.0	549.0
				1.0	0.0	73.0	7.0	20.0	77.0
					0.0	77.0	5.0	18.0	69.0

Table 1 reveals the findings on five patients from whom 1 c. c. of marrow was aspirated. It was noted that the percentage of the various fractions and the number of nucleated cells were elevated or depressed simultaneously. If one sample of mar-

row was hyperplastic, hypoplastic or normal, the other sample was approximately the same. Variations were encountered when particles of bone and solidified fat partially obliterated the pipette in counting the total nucleated cells, making multiple counts necessary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport

INCOME TAX ANNOUNCEMENT

Thousands of business and professional men, who do not come under the wage and salary withholding provisions of the Current Tax Payment Act of 1943, will be required on or before September 15 to file with their Collector of Internal Revenue a form known as the Declaration of Estimated Income and Victory Tax and make payment on the tax they estimate they owe for the year. Some 15,000,000 persons in all will be required to file this declaration, the remaining two-thirds of the

nation's taxpayers being relieved from filing because they are meeting their 1943 tax obligations through the withholdings at source on salaries and wages.

However, withholding at the source does not make everyone current in his tax payments because it does not apply to all wages and salaries, or to other forms of income such as interest, dividends, rents and business profits. Also the withholding rate approximates only the net Victory tax, the normal income tax and the surtax at the lowest

bracket tax, so that it does not make people in the higher wage and salary ranges fully paid up. Finally, certain groups such as those in the armed forces, ministers of the gospel, *professional men*, domestic servants and farm laborers, are exempt from withholding.

Therefore, in order to place all taxpayers on an equal footing, from the standpoint of being current in their income and Victory tax payments, Congress provided a method by which the taxpayer will file a Declaration of Estimated Income and Victory Tax for the year, and pay that estimated tax either in a lump sum or in installments.

Ordinarily, such a return would be filed in March for the current year, at the same time that the taxpayer filed his annual corrected return for the preceding year. In this transition year, however, it becomes necessary for about 15,000,000 individual taxpayers to file a Declaration of Estimated Income and Victory Tax for the Calendar Year 1943 on or before September 15, and to make at that time a payment of half the estimated annual tax, minus combined quarterly payments already made on 1942 incomes (which are credited on the 1943 income), and estimated Victory and withholding tax deductions for the year.

Experts of the Bureau of Internal Revenue have greatly simplified for the taxpayer the task of filing the declarations. A simple form less than 4 by 8 inches, has been prepared in which there are only six blank spaces to be filled in with estimated tax items. For the taxpayer's help in figuring, this is accompanied by a single page work and instruction sheet, with only seven blank spaces, and a ready reference table for quickly computing the estimated tax on his income. More detailed instructions and work sheets will be provided on request to taxpayers who want to do a more precise job of estimating their income and tax due for 1943.

When a declaration shows a tax still owing the Government for 1943, even after all payments and withholdings, then half of the excess is to be sent to the Collector of Internal Revenue along with the declaration. The other half must be remitted on or before December 15.

Credits to be taken on the declaration include payments made to collectors on March 15 and June 15 this year on account of 1942 income taxes; withholdings made by employers under the 5 per cent Victory tax for the first half of the year, before the new withholding system went into effect; and taxes withheld from wages from July 1 until December 31, 1943.

BUFFINGTON HONORED

Dr. Wiley R. Buffington, New Orleans, has been appointed a member of the Council of the Southern Medical Association from Louisiana for a regular Council term of five years, beginning in mid-November, the appointment having been announced

recently by the President-Elect, Dr. W. T. Wootton, Hot Springs National Park, Arkansas. Dr. Buffington succeeds Dr. Lucien A. LeDoux, New Orleans, whose term will expire at the close of the Cincinnati meeting in November and who, having served the constitutional limit, is not eligible for reappointment.

NEWS ITEMS

Commander Earl F. Evans, who graduated from Tulane Medical School in 1930 and who for three years played center on the football team, is now director of physical training department at the United States Naval Academy at Annapolis. Commander Evans has had extremely active duty in the Far East. At the time of Bataan he was surgeon to the submarine fleet, a position which he held until he returned to this country in December on a submarine which, during his period of service, sank five Japanese ships.

The ninth annual meeting of the Mississippi Valley Medical Society will be held at Quincy, Illinois, September 29-30. An excellent group of speakers has been invited for the program.

Dr. Walter B. Cannon, president of the American-Soviet Medical Society, will be formally inducted as a member of the Academy of Sciences of the U. S. S. R. at a reception given in his honor by the Soviet Embassy on Thursday, August 12. Dr. Cannon, who is professor emeritus of physiology at Harvard, is the first American to be a member of both the Academy of Sciences of the United States and that of the U. S. S. R.

UNITED STATES PUBLIC HEALTH SERVICE

Surgeon Charles E. Allen has been relieved from New Orleans and directed to proceed to the Vernon Parish Health Unit, Leesville. Asst. Surgeon William D. Brand has been ordered from New Orleans to the Maritime Service Enrolling Office, Minneapolis, Minn. P. A. Surgeon Jack G. Mearns and Asst. Surgeon John K. McBane have been relieved from duty in New Orleans and ordered to the Public Health Service Relief Station and the Maritime Service Enrolling Office, Los Angeles, Calif., respectively. P. A. Surgeon Joseph G. Pasternack has been ordered to the Marine Hospital, New Orleans from Fort Stanton, New Mexico.

INFECTIOUS DISEASES IN LOUISIANA

For the week closing July 10 diseases reported to the Louisiana State Board of Health in numbers greater than 10 were as follows in numerical order: 29 cases of pulmonary tuberculosis, 23 of whooping cough, 15 of measles, and 11 of influenza. This is truly a very remarkable report. Of course the cases of syphilis and venereal disease in general are excluded, but it is extremely rare that only four diseases that are reportable occurring in num-

bers greater than 10. Of the unusual diseases, there were four cases of typhus fever reported and one case of epidemic encephalitis. For the week which ended on July 17, pulmonary tuberculosis again led the list with 19 cases followed by 16 of mumps and 11 each of measles and bacillary dysentery. There is also listed for this week "other diseases." A footnote in the official report says this includes 31 cases of unclassified pneumonia. Two cases of typhus fever were reported also, and three of meningococcus meningitis. For the week which terminated July 24 there were listed 47 cases of tuberculosis, 28 of bacillary dysentery, 12 of diphtheria, and 10 each of malaria and poliomyelitis. The 11 cases of poliomyelitis reported this week are rather disturbing, no cases having been reported in the previous two weeks. One is wondering whether the epidemic of polio which is striking in Oklahoma and Northern Texas may not be spreading down into Louisiana. For the week which ended July 31, there were 39 cases of pulmonary tuberculosis reported, 13 of typhus fever, and 10 of malaria. Venereal diseases are reported at this time. It will be remembered that they are only totalled every four weeks. Of these diseases the previous four weeks had accumulated 1,684 cases of syphilis, 963 of gonorrhea, 102 of chancroid, 13 of lymphopathia venereum, and 10 cases of granuloma inguinale. In this week also as in previous weeks, there were quite a few cases of "other diseases" which included 38 cases of unclassified pneumonia.

THE AMERICAN CONGRESS OF PHYSICAL THERAPY

Will hold its twenty-second annual scientific and clinical session September 8, 9, 10 and 11, 1943, inclusive, at the Palmer House, Chicago. Rehabilitation is in the spotlight today—Physical Therapy plays an important part in this work. The annual instruction course will be held from 8:00 to 10:30 a. m., and from 1:00 to 2:00 p. m. during the days of September 8, 9 and 10, and will include a round table discussion group from 9:00 to 10:30 a. m., Thursday, September 9. The scientific and clinical sessions will be given on the remaining portions of these days and evenings. A feature will be an hour demonstration showing technic from 5:00 to 6:00 p. m. during the days of September 8, 9 and 10. All of these sessions will be open to the members of the regular medical profession and their qualified aids. For information concerning the instruction course and program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

LEGAL MEDICINE SEMINAR

The Harvard Medical School, Courses for Graduates will offer a Seminar in Legal Medicine to occupy the entire week October 4 to 9, inclusive.

It is planned particularly for medical examiners and coroners' physicians, but will be open also to any other suitable graduate of an approved medical school.

The course will be practical rather than theoretical and will consist of autopsy demonstrations, technic and interpretation of laboratory tests, study of the day-by-day cases of a medical examiner, round table conferences, and the many subjects now included in the widening field of legal medicine. In order that each participant may receive the maximum benefit, the enrollment has been limited to fifteen. For the Seminar the fee is \$25. Application should be made on or before October 1 to Harvard Medical School, Courses for Graduates, 25 Shattuck Street, Boston, Massachusetts.

THE VENEREAL DISEASE PROBLEM IN LOUISIANA FROM THE CIVILIAN'S STANDPOINT

Louisiana today faces a great challenge. With the fifth highest venereal disease rate in the entire country, this state now contains within its borders large numbers of soldiers who have been sent here for training in the science of war. As a result of venereal disease acquired in this state, over 75,000 man days were lost to our armed forces in the year 1942. When we reckon in the days lost to industry, and the death and disability in the years to come, resulting from venereal infections of today, a sorry picture is seen of the toll these diseases are now exacting. Our responsibility is clear. For a healthy and vigorous army, and for a healthy and vigorous Louisiana of tomorrow as well as today, we, all of us, must act. What can we do?

Prevention of the spread of syphilis and gonorrhea is a many sided job, which needs the honest and continued efforts of all groups in the community. Four general lines of attack present themselves—medical, public health, law enforcement, and social.

With the powerful drugs which are now used in the treatment of both syphilis and gonorrhea, the medical problems of control of infectiousness and arrest or cure of the disease as usually easily solved. The arsenical drugs in syphilis and the sulfa drugs in gonorrhea, if taken regularly by the patient, quickly set up a chemical quarantine, which, unlike the quarantine necessary for smallpox or tuberculosis, allows the patient safely to carry on his usual activities without any danger to others. Although a small proportion of patients fail to respond to such treatment, we may justly have great confidence in our medical procedures for curbing the spread of syphilis and gonorrhea.

Knowledge of how, when and where diseases spread is essential to effective control measures. We know that the venereal diseases spread almost always by sexual intercourse. We know further

that they are largely diseases of youth, hitting the late teens and early 20's harder than any other age group. And we know that syphilis can be spread only during the first years and that the period of danger to other people, even by sex contact, bears no relation to the blood test, which in many cases remains positive for life, even after thorough treatment.

Finding, bringing to treatment, and holding to treatment those patients who are spreading venereal disease is our chief public health job. What methods have we at hand? Routine blood testing of employee groups in business and industry? No. Most of those found by such surveys to be syphilitic are no longer infectious. And, because they still have a negative blood test, some of the most dangerous spreaders of syphilis will be missed. Also, gonorrhea, which is eight times as common as syphilis, will not be discovered by such testing. Routine smears for gonorrhea on food handlers and other groups? No. Smears are found positive in only about 30 out of a hundred women with gonorrhea. Contact investigation—that is finding and examining the named sexual partners of patients with newly acquired venereal disease—stands as our most important public health guidepost to the venereal patient who is spreading disease.

In many states, including Louisiana, and throughout the armed forces, procedures have been worked out for quickly transmitting contact information gained from the patient to the public health agency responsible for finding the contact. Once the patient is found, holding him to treatment and prevention of exposure of others is essential. Quarantine hospitals for the isolation and rapid treatment of infectious venereal diseases are needed for these purposes. One such hospital has been in operation in Louisiana for the past year and has established its value beyond question. Education of all the people to the dangers of venereal disease, of the need for early diagnosis and treatment for the patient's own sake as well as for the safety of the community, of the value of prophylaxis in preventing syphilis and gonorrhea, is also a vital part of the public health attack.

Vigorous enforcement of all the laws pertaining to prostitution is essential to successful wartime

venereal disease control. The bar or tavern keeper who is a knowing third party, the hotel proprietor who looks the other way, the tourist camp operator whose cabins have too rapid a turnover, must quickly be shown that such practice must stop. The taxi driver, and bellhop procurer, the madame, and the prostitute herself, no matter what guise she assumes, must learn, and learn immediately that the law will not tolerate their activities. Police and sheriffs, city and district attorneys and judges must work together. Police will naturally become discouraged at arresting prostitutes whom they know will be set free on payment of a small fine. Those in the prostitution racket have plenty of money for fines. "Thirty days or 30 dollars" means little to them; 60 or 90 days, without alternative of a fine, shows that we mean business.

In a recent study it was found that of 1100 women spreading venereal diseases, 21 per cent were prostitutes, 61 per cent pickups or chippies, 16 per cent girl friends, and 2 per cent wives. Thus, a large segment of our problem today concerns the girl on the fringe, the too often teen age amateur whose patriotism—if you will—leads her into dangers far beyond her knowledge. Neither the health officer nor the law enforcement officer can handle this problem alone. Venereal disease must be searched for frequently and carefully in this group. Under age girls must be protected from too great temptation. They must be kept out of bars and taverns, must be safeguarded by patrolling of streets and parks at night. They must be protected by the minimum wage laws from the economic temptation to enter prostitution.

Social agencies, schools, the church, and the home are urgently needed in this important phase of the problem. Opportunities for healthful redirection must be provided—through training schools and industry. Long term protection of the community from the incorrigible and the mentally defective is also of importance.

Our job is not an easy one. It requires energy, interest, cooperation, hard work. None of us is as yet doing all that can be done. I feel confident we will all understand our common problem a little better and will be able to meet it more effectively.

Ira L. Schamberg, M. D.

BOOK REVIEWS

Neurosurgery and Thoracic Surgery: Prepared and edited by the National Research Council, Committee on Surgery. Philadelphia, W. B. Saunders Co., 1943. Pp. 310. Price, \$2.50.

Neurosurgery and Thoracic Surgery is the sixth of the series of military surgical manuals published under the auspices of Division of Medical

Sciences of the National Research Council. It consists of 300 pages, two-thirds of which are devoted to neurologic surgery. Chapter I, concerning Gunshot and Other Injuries of the Scalp, Skull, and Brain, was prepared by Gilbert Horrax and Claude C. Coleman. Specific instruction is given for the care of the wounded soldier from the time he is

picked up. Chapter II, by Claude C. Coleman and Cobb Pilcher, deals with Gunshot and Other Injuries of the Spinal Cord. Chapter III, Injuries of Intervertebral Disks in Military Service, is the only one not dealing with an emergency problem. It is written by J. Grafton Love. Byron Stookey and John E. Scarff collaborated on the chapter dealing with Injuries of Peripheral Nerves. This chapter is the most important and takes up over one-third of the entire volume. It includes valuable diagrams and charts for recording sensory loss and muscle paralysis due to nerve injuries. Chapter V, entitled Infections of Nervous System and Its Coverings Arising From Injuries of War, was written by Charles Bagley, Jr., Francis C. Grant and Gilbert Horrax. It deals with infections of the scalp, osteomyelitis of the skull, meningitis, epidural and subdural abscesses, abscesses of the brain, and epidural spinal abscesses.

The section of the book devoted to Thoracic Surgery was prepared by Evarts A. Graham, Isaac A. Bigger, Edward D. Churchill, and Leo Eloesser. Chapter I deals with such problems as first aid measures for chest injuries, transportation, treatment of shock and drainage of the pleural cavity. Chapter II is a classification of chest injuries with notes regarding first aid and definitive treatment. Chapter III is concerned with the Complications and Sequelae of Thoracic Injuries. The remaining chapter covers the fundamental surgical technics and is well illustrated.

This small volume, covering the military aspect of two surgical specialties, is a masterpiece of concise writing and should be of great assistance to general surgeons in need of condensed and authoritative information.

DEAN H. ECHOLS, M. D.

Psychosomatic Medicine: By Edward Weiss, M. D. and O. Spurgeon English, M. D. Philadelphia, W. B. Saunders Co., 1943. Pp. 687. Price, \$8.00.

The appearance of this splendid book on the clinical application of psychopathology to general medical problems, is of vast significance to psychiatry and exemplifies the fact that doctors are shrewd and alert to changing trends and values. The book is unique and indicates the approach of far-reaching trends in the field of medical science.

Psychiatrists have long been aware of the fact that understanding illness and treating sick people consists of much more than a knowledge of disease and that emotional factors strongly influence recovery from illness and injury.

Chapter 1 emphasizes the fact that a real understanding of psychopathology is essential in order to study the emotional life in relation to ill health.

Chapter II is excellent. It expresses the theme that all illness is a problem of disturbance of psyche and soma. Herein the authors go as far as to state that the first cause of certain disease pictures is psychopathology rather than tissue pathology.

Even with the use of all available superlative expressions of praise I cannot overemphasize the importance and value of the material appearing in the last four chapters.

This excellent volume is the outgrowth of years of research on clinical problems, clinical conference and teaching exercises in which patients were presented who had been studied psychologically as well as medically. Any physician or surgeon who understands and applies the principles and practices outlined in this elemental work will be tremendously helped to treat his patients more efficiently and successfully.

C. P. MAY, M. D.

Traumatic Surgery of the Jaws: By Kurt H. Thoma, D. M. D. St. Louis, The C. V. Mosby Company, 1942. Pp. 315, illus. Price, \$6.00

This volume (297 pages) is offered primarily to the dentist to assist him in preparation for first aid and the emergency treatment of injuries to the jaw. The plastic surgeon, the general surgeon, as well as the medical corps of the armed forces will find in it much of instructive value and interest. It is a very timely treatise presented during a period when injuries to the face and jaws are common casualties of modern warfare.

The examination and treatment of fractures of the jaw are quite completely covered in a concise and clear account of the newest and up-to-date methods. Treatment is based upon basic principles and the elaborate apparatus so often presented to the profession are intentionally omitted. Skeletal fixation and wiring are described adequately and various technics are included. For the purposes for which the book was evidently designed one or two good methods would seem to have served the objective better. Too many methods in a text of this type have a tendency to confuse rather than clarify.

The chapter on soft tissue injury, and burns is too terse and abbreviated to be complete and in a treatise such as this (first aid and emergency treatment) is not to be expected. The same applies to the therapy of infections and non-union of fractures, which are barely touched upon.

The book is well written, the type is clear and the illustrations, 282 in all, are splendid. The latter thoroughly and adequately serve their purpose and enhance to great degree the descriptive methods accompanying them. In the opinion of the reviewer this book is a real contribution to an important subject and at an appropriate time.

WALDEMAR R. METZ, M. D.

Neurology: By Roy R. Grinker, M. D. Springfield, Ill., Chas. C. Thomas Co., 1943 Pp. 1136. Price, \$6.50.

We are always looking for something new with the idea, no doubt, that everything new is sure to be better. The steady advance of neurology has necessitated a thorough revision of this vitally useful and dependable reference volume and Grinker's

new neurology is far better and more comprehensive than the last edition.

In this third, largely rewritten edition, more effective illustrations, tables and much new material have been included throughout. To give even a partial list of the new inclusions would require far more space than is allowed for this review.

The author says this book represents an attempt at a correlation of certain biological data which are essential to the study of the human nervous system in health and in disease. He believes, that, only in this manner, can adequate instruction in neurology be given so that the student will understand and not simply learn it.

This great book is an encyclopedia of things neurological, by a master American neurologist and teacher. It is a basically oriented, fundamental work, and not merely a tabulation of signs and symptoms, which affords step-by-step guidance in concise, definite terms that leave no room for misunderstanding.

C. P. MAY, M. D.

Clinical Roentgenology of the Cardiovascular System: By Hugo Roesler, M. D., F. A. C. P. 2d ed. Springfield, Illinois, Charles C. Thomas, 1943. Pp. 480, illus. Price, \$7.50.

This is the second edition of a well known volume on the roentgenology of the normal and pathological cardiovascular system. Revision was considered necessary because of new technics, and the steady progress which has occurred in this field of medicine. Very much new material, 37 pages, 138 figures, and 819 references have been added in the second edition.

The first chapter covers in considerable detail the technic of the roentgen examination of the cardiovascular system. The various types of apparatus and the positions of the patient are considered. Chapters II through V complete the discussion of the anatomy, measurements and dynamics of the normal cardiovascular system. The chapter on measurement is especially valuable because of the evaluation of the various technics of measurement, and the correlation of cardiac measurement and certain body measurements. Chapter VI correlates the anatomical, clinical and roentgenologic findings in the normal cardiovascular system and in various conditions, such as pregnancy, congestive lung failure and pulmonary infarction.

Cardiovascular disease is considered from the viewpoints of etiology and structural changes in Chapters VII and VIII respectively. Diseases of the aorta and pulmonary artery are discussed in the next two chapters and pericardial disease is considered in Chapter XI. Chapter XII dealing with congenital cardiovascular malformations is one of the most valuable and interesting portions

of this book. Disorders of cardiac rhythm, rate and contraction are considered next and the last chapter is devoted to peripheral vascular disease.

In general, the text is clear and well written. The illustrations are excellent and the captions are complete and detailed, which adds considerably to the value of the illustrations. The bibliography is extensive and the index is complete.

This book is indispensable to the cardiologist and the roentgenologist. It should be studied carefully by those internists and general practitioners with available roentgen ray equipment who fluoroscope their patients with cardiac disorders.

J. N. ANÉ, M. D.

PUBLICATIONS RECEIVED

W. B. Saunders Company, Philadelphia and London: *Gastro-Enterology* (in three volumes), by Henry L. Bockus, M. D., Volume I. *The Esophagus and Stomach. Manual of Fractures, Treatment by External Skeletal Fixation*, by C. M. Shaar, M. D., F. A. C. S., and Frank P. Kreuz, Jr., M. D., F. A. C. S. *Geriatric Medicine*, edited by Edward J. Stieglitz, M. S., M. D., F. A. C. P. *Collected Papers of The Mayo Foundation*, edited by Richard M. Hewitt, B. A., M. A., M. D., A. B. Nevling, M. D., John R. Miner, B. A., Sc. D., James R. Eckman, A. B. and M. Katharine Smith, B. A., Volume XXXIV, 1942.

American Medical Association, Chicago: *Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1942. New and Nonofficial Remedies, 1943.*

The Blakiston Company, Philadelphia: *Genealogy of Gynaecology (History of the Development of Gynaecology Throughout the Ages)*, by James V. Ricci, A. B., M. D.

Grune & Stratton, New York: *The Boy Sex Offender and His Later Career*, by Lewis J. Doshay, M. D., Ph. D.

The Commonwealth Fund, New York: *Diagnosis of Uterine Cancer by the Vaginal Smear*, by George N. Papanicolaou, M. D., Ph. D. and Herbert F. Traut, M. D.

Stanford University Press, Stanford University, Calif.: *Handbook of Tropical Medicine*, by Alfred C. Reed, M. D. and J. C. Geiger, M. D.

Lea & Febiger, Philadelphia: *Roentgenographic Technique*, by Darmon Artelle Rhinehart, A. M., M. D., F. A. C. R.

Industrial Medicine Book Company, Chicago: *The Mind of the Injured Man*, by Joseph L. Fetterman, M. A., M. D.

The Williams & Wilkins Company, Baltimore: *The Principles and Practice of Industrial Medicine*, edited by Fred J. Wampler, M. D.

Physicians' Record Company, Chicago: *Medical Abstract Service, Series 1, No. 1.*

New Orleans Medical

and

Surgical Journal

Vol. 96

OCTOBER, 1943

No. 4

LESIONS OF THE STOMACH*

FRED JENNER HODGES, M. D.†

ANN ARBOR, MICHIGAN

Organic lesions of the human stomach which can be recognized by x-ray methods of examination are not common among the patients who are referred each year because of leading symptoms or suspicious physical findings referable to the alimentary tract. During the past five years it has been our experience to have reported the entire absence of x-ray signs of upper gastrointestinal tract disease in a group of 10,000 individuals so examined. During this same interval of time we have recorded convincing x-ray signs of gastric neoplasm, the most commonly encountered form of gastric disease which can be recognized, in 572 patients, while gastric ulcer, devoid of the signs characteristic of associated neoplasm, has been observed in 336 individuals. Clearly demonstrable duodenal ulcers numbered 1944 or considerably more than gastric carcinoma and gastric ulcer combined.

At first glance one might be led to assume on the basis of statements such as these that the x-ray search for organic lesions responsible for gastric symptoms must be a dreary procedure, seldom punctuated with moments of clinical interest. Nothing could be further from the truth. The daily sessions in the fluoroscopic dark room, where gastrointestinal examinations are conducted, are as thrilling as any de-

tective story and constitute an unending and ever-variable challenge to the diligence and the resourcefulness of the examiner. Conditions in the panorama which confronts the fluoroscopic observer are kaleidoscopic in character. The element of suspense is ever present for it is to be remembered that only persons in whose cases there exists some reason to suspect disease are subjected to this procedure. Bare figures for the frequency with which gastric neoplasm and gastric ulcer are encountered are misleading because in addition to these top ranking lesions, abnormalities of the esophagus and the upper portions of the small intestine, as well as a number of even less common gastric disorders, are constantly being sought for. The element of human interest is great because all patients, however blasé they seek to appear, are deeply concerned with the verdict to be rendered in their case, and more often than not their simulated unconcern is painfully transparent. Activities in the fluoroscopic room bring the roentgenologist very close indeed to his patient and provide an outlet for his sympathy for which there is little opportunity for expression in the reporting of film findings which constitutes a considerable part of his daily work.

While many of the functional and organic irregularities of the stomach are quickly and easily discoverable at the screen, past experiences warn the radiologist that deviations from the normal, even those of great significance, may be exceedingly difficult to demonstrate. The knowledge of this state of affairs provides a constant spur to concentrated effort with the result that interest never flags.

*Read before the Seventh Annual Meeting of the New Orleans Graduate Medical Assembly, March 15-18, 1943.

†From the Department of Roentgenology, University of Michigan, Ann Arbor, Michigan.

Observations made in the fluoroscopic room dictate the extent and the nature of the supplementary filming which is desirable and when this has been completed the radiologist once more reviews each day's grist of patients, armed with a considerable amount of evidence relating to the status of the upper gastrointestinal tract. Whenever he feels the slightest doubt in his mind regarding the true situation in the case of any individual patient he is in duty bound to withhold opinion pending the introduction of additional evidence. Indeed if he is seriously determined to do the best work of which he is capable, it is no hardship for him to conduct the necessary re-examination.

If one enters upon the examination of each individual patient with too much detailed clinical information provided in advance, his versatility in running down each and every suspicion of abnormality observed at the fluoroscope suffers from lack of exercise and he will find his mind less receptive to the numerous possibilities which may be capable of correlation with the patient's symptoms and physical findings. With all due respect for the value of a carefully elicited medical history, every roentgenologist who has had any considerable experience in this field is fully aware of the fact that his findings may directly controvert the implications of that history and he is in duty bound to express whatever opinion he has to offer on the basis of his own findings rather than hearsay evidence, however attractive this may be.

In the hands of a roentgenologist whose experience in gastrointestinal diagnosis is wide, as judged by the number of his own mistakes which he has recognized, the accuracy of x-ray methods when applied to the search for organic gastric lesions is remarkably high. This fact, however, by no means implies that even the most experienced and expert x-ray diagnostician has ever achieved the coveted goal of complete infallibility.

GASTRIC ULCER

Gastric ulcers which stand out in bold relief along the middle and lower one-thirds

of the lesser curvature, whether viewed at the screen or in supplementary roentgenograms, are childishly simple to recognize, particularly if they measure a quarter of an inch or more in diameter (fig. 1). Ulcers of the same general character and dimen-



Fig. 1. Sizeable benign gastric ulcer, lesser curvature.

sions are distinctly more difficult to detect if they happen to be located a sufficiently great distance anteriorly or posteriorly from the lesser curvature, in which case they are readily obscured by the excess of opaque material within the lumen of the stomach, but as a rule they can be found without serious difficulty when the stomach is compressed through the abdominal wall. Even though ulcers may present on the lesser curvature, their presence may be overlooked because of overlapping shadows of the extreme gastric cardia, a situation which is particularly common in stout or obese patients whose stomachs are located high in the abdomen. Minute ulcer craters are easily missed unless the examiner follows the practice of exploring every available square centimeter of stomach wall, using every device at his command. Unfortunately, perhaps, the size of the ulcer

bears little relationship to the severity of the symptoms with which it is associated, and it is therefore fully as important to recognize the small as well as the large.

Once the presence of ulceration of the various layers of the stomach wall has been demonstrated, interest centers upon the histologic characteristics of the lesion. While it is well known that somewhere in the neighborhood of five per cent of gastric ulcers, which have been subjected to microscopic study, show unmistakable signs of associated malignancy, the roengenologist knows full well that his relatively crude method of examination supplies few reliable criteria upon the basis of which malignant ulcers can be differentiated from those which are benign. Oftentimes the temptation is great to state that because a particular ulcer crater is somewhat irregular in outline, seems to burrow laterally into the layers of the stomach wall, or seems to be partially filled with nodules of tissue, or surrounded by elevations which protrude into the lumen in ragged fashion, that it is already associated with an actively growing neoplasm. Certainly it is true that he should maintain an alert lookout for any signs which may suggest neoplasm, but at the same time he should constantly remind himself that the signs upon which such opinions are based are far from reliable. By far the better course to follow is to admit the possibility of malignancy in any demonstrably ulcerating lesion and place his dependence upon the behavior of the lesion in judging its true character. The practice of subjecting all gastric ulcer patients to rigid bed rest and active medical management with re-examination in ten days to two weeks is the most logical method of dealing with this situation. The delay in the treatment of cancer is not great and in view of the average rate of development of gastric carcinoma it should not constitute a real hazard for the patient. The large majority of gastric ulcers will respond promptly if rigorously treated and virtual or complete disappearance of the roentgen

signs may be expected in two or at most three weeks. We have observed complete disappearance in as little as seven days. If the ulcer crater is still visible at three weeks and if treatment has been carefully and rigorously supervised, it is good practice to insist upon surgical intervention. Although in our experience four out of five of the ulcers which have been surgically treated by partial gastric resection in accordance with this policy, have failed to show any microscopic evidence of underlying or associated carcinoma, the single case so uncovered fully justified the surgical intervention in the other four. It is nothing short of tragic to permit a patient to worry along with a recalcitrant ulcer for month after month only to discover in the end that inoperable cancer has been allowed to gain a foothold (fig. 2).

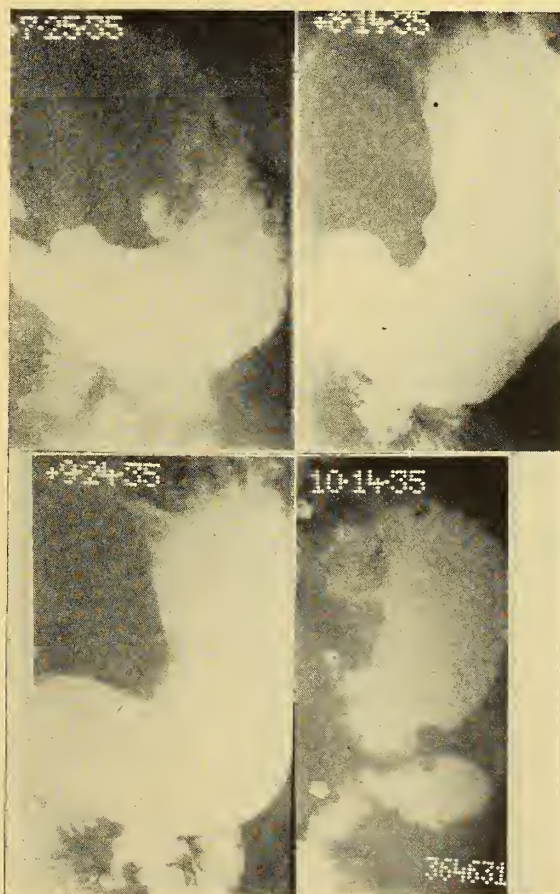


Fig. 2. Large gastric ulcer, progressive response to medical treatment. Minute carcinoma discovered at operation.

CARCINOMA OF STOMACH

The most frequently feared and encountered gastric lesion is carcinoma of the stomach. As in the case of gastric ulcer, these lesions are often recognizable with extreme ease because of the large size which they have attained before associated symptoms have sufficiently alarmed the patient to seek medical advice. This state of affairs is very discouraging because long term survival without recurrence of the disease is extremely uncommon, even in the face of rapid advances in gastric surgery. It is not necessary, however, for lesions to have attained great dimensions in order to produce characteristic roentgen signs which are very reliable. The fundamental feature of the deformity produced by gastric cancer is a persistent distortion of the barium column in the lumen of the stomach or in roentgenological parlance a "filling defect." Such deformities or filling defects may be small or large, rough or smooth in outline, and located at any point along the surface of the organ (fig. 3). It is not even necessary that the mucosal pattern of the stomach lining be visibly broken, for tumors which infiltrate widely throughout the walls of the stomach will reduce its normal pli-

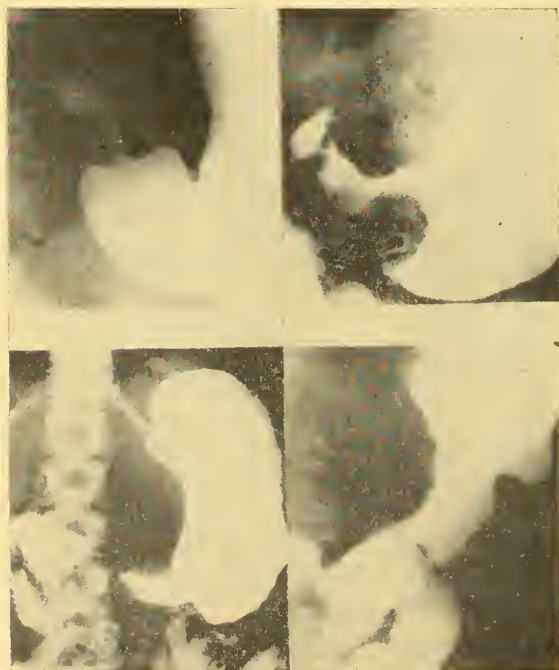


Fig. 3. Various expressions of gastric carcinoma.



Fig. 4. Linitis plastic; lowermost gastric segment uninvolved.

ability, thus preventing normal distention to accommodate gastric contents. The descriptive term "linitis plastica" is applied to lesions of this sort and the resultant deformity of the stomach is oftentimes profound (fig. 4). Benign polyposis of the stomach presents the characteristic finding of filling defect, but in this instance the defects are intragastric, characteristically smooth and rounded and sometimes demonstrably pedunculated. Although such lesions are benign in their incipency, their proclivity for developing malignant characteristics is so well known that they should in every instance be removed by surgical means even if this requires complete gastric resection. This is one stage at which gastric carcinoma can be dealt with effectively in virtually every instance.

No recitation of the problems which confront the roentgenologist in running to earth the existence of gastric neoplasm should fail to include mention of the difficulties which are so prevalent when dealing with tumors which involve the extreme cardiac portion of the stomach and its environs. It is axiomatic that errors in roent-

gen diagnosis of gastric lesions at the pyloric end of the stomach are those of commission, whereas errors involving lesions at the cardiac end are dismal errors of omission. There are many reasons for this, chief among them the inaccessibility of this part of the stomach to the examiner's palpating hand. Good diagnosis at the screen depends to a very considerable extent upon manipulation through the abdominal wall to determine the degree of pliability of the gastric walls and to scrutinize the pattern of the mucosal surface. Many maneuvers of great ingenuity are used to increase the amount of stomach wall which can be brought under the control of the palpating hand, but none of these can succeed in rendering the extreme cardia accessible. Unless the screen observer is alert to the pitfalls which are common at the gastric inlet he may miss entirely the telltale signs of disease observable only at the first moment when opaque material is discharged from the esophagus into the gastric lumen. At this moment roughness of the gastric lining and irregularity of the gastric walls may often be quite apparent, only to become obscure as gastric filling progresses. It is highly important that the observer rivet his attention at the level of the diaphragm during the early stages of ingestion and that he rotate the patient until every possible aspect of the lowermost portion of the esophagus and the neighboring stomach have been brought into view. By changing the position of the patient from upright to horizontal, from recumbent to prone, and the various degrees of obliquity it may be possible to demonstrate obscure lesions with greater clarity.

Finally, it should be pointed out that situations other than gastric neoplasm may be responsible for perfectly obvious defects in gastric filling, unsuspected subphrenic abscesses on the left, food residues within the lumen, ingested non-opaque foreign bodies, gastric lues, and localized areas of hypertrophic gastritis, to mention but a few, must be considered by the roentgenologist when evaluating gastric filling defects (fig. 5).

All told the business of analyzing the status of the stomach of any individual even remotely suspected of harboring an intrinsic gastric lesion is a somewhat complicated one. If the examiner is sincerely devoted to his work, faithful in his diligence, and sufficiently experienced to have developed reliable judgment, x-ray examination offers a highly reliable method of study. It is always to be remembered, however, that the method is relatively crude, that unless tangible, persistent deformity of the stomach can be discovered the presence of gastric cancer cannot be honestly postulated. Some gastric carcinomas have been known to metastasize widely without producing lesions in the parent organ which are sufficiently deforming in character to rise above the threshold point of recognition by roentgen methods. The first few experiences with this type of lesion are embarrassing and discouraging but if one calls upon his store of philosophy he can sometimes discover equally embarrassing situations which must be borne by other members of his profession.

SUMMARY

By and large x-ray examination of the stomach has richly earned the position of



Fig 5. Localized hypertrophic gastritis, greater curvature.

competence which it enjoys in the estimation of internists and surgeons. The advent and increasing utilization of gastroscopy in the same field should be looked upon as a valuable means of confirming questionable lesions rather than a competitor in any sense of the word.

INFANTILE PARALYSIS*

ITS DESCRIPTION AND TREATMENT

SISTER ELIZABETH KENNY

Minneapolis, Minn.

The great reluctance shown by some medical men in the United States of America in accepting the Kenny method of treatment for the disease known as infantile paralysis is based on their failure to realize that the understanding of this method of therapy requires a fundamental revision of the old concept of the nature of the disease. It was firmly embedded in the minds of the medical world that the only significant change in the muscles was partial or total flaccid paralysis resulting from damage or destruction by the virus of poliomyelitis to the motor neurons in the anterior horn of the spinal cord. The deformities were believed to be caused by the strong normal muscles pulling and stretching the weak paralyzed ones. In order to treat this condition, immobilizing supports were applied as soon as possible to retain the bodily alignment and to overcome shortening of the supposedly strong muscle and lengthening of the supposedly weak one. The latter muscle would be, as it was expressed, "put in a position of advantage" by shortening, and rigidly retained in this position through the entire convalescence with the exception of the treatment periods and, even during these periods, it was supposed to be unwise to leave off the supports on the one limb while the other was receiving attention. In many textbooks it was advised to leave the supports on the limbs while the patient was receiving pool treatment.

The old treatment was wrong because the old concept of the disease was wrong. While paralysis undoubtedly occurs from this acute infection, it is not in the majority of cases the most important damaging factor. The disorders of muscular physiology which occur in poliomyelitis and which have been almost entirely neglected by the medical profession include: (1) Muscle spasm; (2) mental alienation; and (3) muscle incoordination. The Kenny method is designed to treat these three disabling conditions and they can be relieved by this treatment. No effective treatment is available at present for paralysis resulting from destruction of anterior horn cells.

On consideration of the world wide acceptance of the old theory, the antagonism of the medical world to a radical change, to a treatment diametrically opposed to the procedure of immobilization, can well be understood. The complexity of the new concept of this disease, in addition to the fact that these symptoms had for so long a time gone unrecognized, delayed the acceptance of my contribution. That is why it is necessary for me to be present here today—and for me to visit the different parts of the earth and present my work. The prejudice against accepting a new treatment for poliomyelitis based on a new concept of the disease retarded the work in Australia for almost thirty years. I am happy to say that the medical profession in the United States of America has been quicker to discard old prejudices.

It has been stated that even with the use of immobilization, deformities did occur despite the best efforts of the orthopedic surgeon. Therefore, to present a treatment recommending the abandonment of this procedure and a routine treatment for muscle conditions that were supposedly nonexistent would indeed impress one with the thought that the person making such a presentation was, to put it mildly, unbalanced. This was the situation in Minneapolis in the year, 1940, at the time of my first appearance. However, owing to the fact that I had been officially introduced by my government and a group of Aus-

*Read before the New Orleans Graduate Medical Assembly, New Orleans, March 15-18, 1943.

tralian medical men of repute had sought the assistance of their colleagues of the American Medical Association for the further elaboration of my work, I was—through the good offices of Dr. Wallace Cole, Professor of Orthopedic Surgery of the University of Minnesota—allowed to proceed.

My first endeavor was to prove by evidence produced that: (1) The orthodox theory, with regard to the symptoms of the disease, was incorrect; (2) deformities were not caused through strong or normal muscles pulling weak ones; (3) pseudo-paralysis could be induced by the neglect of the treatment of the true symptoms.

It will be remembered that the first report published with regard to this new concept and treatment appeared in the *Journal of the American Medical Association*, June 7, 1941, and was presented by Drs. Wallace Cole and Miland Knapp who acknowledged that I had produced evidence to prove muscle spasm was present in 100 per cent of the cases under review. Muscle spasm is made up of two phenomena, both of which result from hyperactivity and hyperirritability of the synaptic connections to the motor nerve cells in the spinal cord: (1) Hypertonus of muscles; (2) hyperirritable stretch reflex. These changes, if untreated, persist for long periods of time and in the later stages produce contractures and deformities. They respond to treatment better the earlier in the course of the disease that active therapy is begun. Even after a delay of only a few weeks, muscle spasm becomes far more difficult to relieve. Stretching and pressure on muscles in spasm increase the pain and exaggerate the spasm, making treatment less effective. The muscle in spasm is a weak muscle and intensive treatment is required to restore it to normal function.

Much evidence has been recorded to demonstrate the presence of the condition of mental alienation. The alienated muscle is a non-functioning muscle which is free from pain and is not shortened. It differs from a muscle paralyzed by anterior horn cell destruction in that, with proper treat-

ment, it can be restored to normal function. Alienation is caused by failure of the nervous excitation to reach the intact anterior horn cells as a result of a physiologic block to the passage of impulses in the spinal cord. It is evident that such a muscle will fail to function but will have the potentiality for full recovery, since the anterior horn cells have not been destroyed by the virus.

The spasm is found in the muscle directly affected by the disease and was hitherto referred to as the strong muscle pulling the weak flaccid muscle. The muscle referred to as the flaccid muscle is really the muscle alienated, and has ceased functioning through the physiologic block already mentioned; and the brake put upon its action by the shortened opponent which is in painful spasm. The first procedure in the treatment of these symptoms is to relieve pain to overcome the spasm and allow the hypertonic muscle to relax and lengthen. This will remove the brake upon the opponent but will not remove the physiologic block to the passage of nerve impulses in the spinal cord. This condition requires specialized treatment by a trained technician, and muscles that have heretofore been regarded as completely paralyzed will regain function and become normal. I have demonstrated this phenomenon upon many occasions. I will refer you to the statement made by Dr. Alfred Deacon, Orthopedic Surgeon, Children's Hospital, Winnipeg, which appeared in the *Canadian Public Health Journal*, August, 1941, reading: "We were astounded to see Miss Kenny restore what we had recorded as completely flaccid or paralyzed muscles to full function by establishing mental awareness."

Also during a recent visit to Minneapolis of Dr. Henderson, Mayo Clinic; Drs. Key, McCarroll and Crego of St. Louis; Dr. Compere of Chicago; Dr. Funstan of Virginia; and Dr. Schumm of Milwaukee, a patient was examined by Dr. Key in the presence of all the above mentioned medical men—also Drs. Pohl and Knapp of Minneapolis—and pronounced to be suffering from complete paralysis of the quadriceps. It was

agreed by all that this was so. This patient had had eleven days of intensive treatment for spasm in the hamstrings and had not yet received the specialized treatment for alienation of the quadriceps. However, I disagreed with the diagnosis and gave her the treatment for alienation and in a few minutes the patient was able to extend her leg and support it in mid-air.

A further example was demonstrated in New Jersey Medical Center, Newark. A patient was presented to me during my recent visit, supposedly suffering from paralyzed lateral abdominals on the left side. This condition had persisted for several months and an operation for the transplantation of the tensor fasciae latae fibers was contemplated in the near future. However, I am happy to say that once again it required only a few minutes by our system of muscle analysis to prove that all the abdominal muscles were normal and could contract strongly. The brake in this instance was in the posterior neck and back. This evidence was presented in the presence of the supervising orthopedic surgeon and the medical supervisor and assistant as well as many others.

I could cite many such incidents but consider evidence recorded in Canada and presented in New York and Minneapolis sufficient. This evidence proves the presence of spasm and alienation.

The next symptom to be discussed is incoordination. I regret to say when this word is used the reply is usually given, "You mean substitution. We have always recognized that" and very little time is given me to explain that I do not mean substitution.

Substitution is a conscious effort put forth by the patient to bring a strong muscle to the aid of a weak or paralyzed muscle and perform a movement. Incoordination is an entirely different condition. It is a misdirected impulse. In attempting active contraction of a muscle, other muscles including synergists, or antagonists, or entirely unrelated muscles, even on the opposite side of the body, or at some distance from the prime mover, may be seen to con-

tract. Muscles that contract in incoordination frequently show fascicular twitchings. Incoordination is also frequently found within a single muscle, in which instance substitution would be impossible. Incoordination may be observed in reflex as well as in voluntary motion and is fundamentally a disorganization of muscle function on an involuntary level. It may be related to the hyperirritability of synaptic connections in the spinal cord which appears to be the cause of muscle spasm. One may think of the virus as producing a breakdown of synaptic resistance and a disorganization of synaptic connections in the spinal cord, so that the impulses run riot as it were, and other muscles not normally in action will contract.

Substitution is also a factor in the abnormal functioning of muscles in poliomyelitis. For example, a patient may have a potentially normal psoas muscle but fail to use it. When requested to flex the thigh, he will attempt to do so from the origin of the sartorius and instead of an even thigh flexion, the action would be that of pulling down the pelvis with the sartorius contracting from its tendinous origin. This will eventually tend toward a pelvic deformity and an apparent leg lengthening. The action of hip flexion will be performed but not with the psoas muscle. A technician trained in the method will quickly detect this and correct the condition.

The condition of paralysis by complete destruction of anterior horn cells is not a common occurrence in this disease. It may occur in about 20 per cent of cases in contrast to muscle spasm, which is present in all cases. One may, therefore, think of anterior horn cell destruction as a common complication rather than as the primary change in poliomyelitis. For true paralysis due to motor denervation there is no effective treatment, since anterior horn cells are incapable of regeneration.

I have frequently heard the remark that patients recover without treatment. I also have frequently heard the remark that patients have been discharged as perfectly normal and have reported perhaps weeks

or months or years later (especially during the period of rapid growth) to the orthopedic surgeon with more or less objectionable deformities. This can be readily understood when the symptoms of the disease have not been treated. The shortened muscles have never been attended; the spasm has not been relaxed; bone growth is retarded; ossification of one limb has been prematurely brought about and much damage has been done.

In the patients treated by our system a very minute examination is given before final discharge. This is to insure that the future of the patient shall not be handicapped if he wishes to follow the occupation of a sailor, soldier, carpenter, plumber, and so on. I have been rather severely criticized for, as it has been expressed, "putting the children through acrobatic feats", by those who are not familiar with our routine.

However, during my visits to other centers I have frequently been presented with patients who have not had the treatment for the symptoms mentioned above and are severely handicapped, although not suffering from any definite paralysis. For instance, I was recently asked by a doctor to give an opinion of a case of long standing poliomyelitis. The patient was a boy twelve years old. He could not run or climb stairs satisfactorily. He walked with a peculiar gait. His pelvis was pulled downward at the back, and he had a compensatory curve in the lumbar region which caused shortening of the spinal muscles. His chest and abdomen protruded. His shoulders were pulled backward. This condition was all caused through untreated spasm in the biceps femoris. The condition had persisted for several years. However, a belated treatment for the cause of all the trouble rectified the condition in six months. Three weeks of correct treatment in the acute stage would have saved all the years of anxiety and financial loss. I have in my possession much evidence of the presence of these conditions which I shall be pleased to present to you—also evidence of the dis-

aster attendant on the non-treatment of those symptoms and conditions.

I have recently returned from a tour of inspection of certain centers where technicians and nurses are working who have received a certain knowledge of the symptoms and the treatment evolved for these symptoms. I have found that when the system is carried out in its entirety much better results are obtained than where there has been failure to utilize certain principles. Out of the eight institutions visited I found only two adhering strictly to the Kenny technic. For instance, I have impressed upon students the advisability of the blanket bed. Two of the eight had adhered to this principle, and I found that stiffness and pain had been overcome much more quickly in these two institutions than in any of the others. Contact with the cold linen sheets will induce spasm and make treatment much more difficult. The advisability of treating the conditions from the onset may be confirmed by the evidence submitted by Dr. Lowman of Los Angeles. Dr. Lowman stated that patients he received from the Infectious Disease Hospital were in such good condition that he was doubtful about the severity of the onset and made it his business to visit the institution and see for himself. He examined the patients and found the epidemic was a severe one. The patients were very sick. The good condition upon discharge to the Orthopedic Hospital was not due to a mild infection but to the treatment of the true symptoms in the acute stage. I also found during my round of visits that muscle testing according to accepted orthodox theories had been practiced in several of the institutions with the result that spasm was aggravated and muscle shortening prolonged and hope of final normal recovery minimized. However, despite the failure to adhere strictly to the method a much higher percentage of recoveries has been obtained than upon any previous occasion, and the medical supervisors were all very well satisfied.

The highest recorded recoveries in the past, according to statistics presented from the St. Louis group was 17 per cent. At all

the institutions practicing the Kenny Method the recoveries were approximately 80 per cent. Where the work was strictly carried out the percentage was still higher.

It will be readily understood by the evidence presented in this paper that the concept of the disease is a new one and, to gain the best results, must be recognized as such. The symptoms caused by the introduction of the virus into the nervous system are far more complex than those previously accepted and treated. My contribution to medicine has not been a reformed treatment but an entirely new concept. I am hoping that with further scientific research a progressive improvement may be brought about. I am happy to say that the research instituted since my arrival in the United States of America has increased the evidence to prove my concept correct.

THE CHRONICITY OF LEPROSY

G. H. FAGET, M. D.†
Carville, La.

Howard Fox says that when he was in Bergen, Norway, in 1903 he met Dr. Armauer Hansen, who seemed proud to show him a patient who had suffered from leprosy for 40 years. He recalled this incident later on his visit to the leprosarium in Spanish Town, Jamaica, in 1931, when he saw three patients who had had leprosy for 51, 45 and 35 years, respectively. Through correspondence he recently learned that one of them was still alive, 61 years after the onset of leprosy.

These notes of Fox¹ stimulated me to review the clinical records of the patients at the National Leprosarium. I found that among 380 present inmates there are five with neural type of leprosy who have had the disease for 53, 51, 48, 46, and 41 years, respectively. Eighteen others, 14 neural and four mixed cases, have survived 30 to 40 years of leprosy, and 32 (19 neural and 13 mixed cases) have suffered from leprosy for 20 to 30 years. Thus a total of 55 patients, over 14 per cent of the entire popu-

lation of the National Leprosarium, show a chronicity of leprosy of over 20 years' duration. Since more than 70 per cent of the residents of the National Leprosarium have a predominantly lepromatous type of disease, the higher incidence of neural cases among the long-lived patients becomes more significant.

The table below shows the distribution as to type and duration of leprosy in these 55 patients.

TABLE 1.
DISTRIBUTION AS TO TYPE AND DURATION OF
LEPROSY IN 55 PATIENTS

Type	Duration		
	20 to 30 years	30 to 40 years	40 to 53 years
Neural	19	14	5
Mixed	13	4	0

It is well known that the prognosis of lepromatous (nodular) leprosy is much worse than that of the neural type. The duration of life in lepromatous leprosy, after the diagnosis has been established, is usually limited to 10 to 12 years. Occasionally the superimposition of neural lesions in a lepromatous case has a favorable influence upon the prognosis and causes the nodular lesions to subside. This probably accounts for the comparatively long life of the cases of mixed leprosy reported in the above table.

In neural leprosy the span of life is not necessarily shortened. Indeed it may even be prolonged, as noted in the first of the six cases of neural leprosy reported here. This case seems to substantiate the claim that one way to live to an old age is to develop a chronic illness and nurse it.

CASE No. 1

A white man, born in Mexico, has suffered from leprosy for 53 years. He entered the United States in 1888. Two years later, at the age of 14, the diagnosis of leprosy was made and he was admitted to the isolation hospital in San Francisco. In March 1922 he was transferred to the National Leprosarium.

The first manifestations of leprosy were maculo-anesthetic lesions on the forehead and body. Numbness and swelling of the hands and feet were next noted, followed by facial paralysis. Leprosy has resulted in total blindness since 1899, a period of 44 years.

†Senior Surgeon U. S. Marine Hospital (National Leprosarium) Carville, La.

The patient has outlived his four brothers and four sisters, none of whom had leprosy. There is little doubt that leprosy has been a means of prolonging his life, since continuous institutional care has protected him from the hazards and diseases of outside life.



At present the disease is definitely arrested, although it has rendered the patient totally disabled for gainful occupation. He is satisfied and contented with institutional life, taking great interest in his surroundings and the music and news he hears on the radio. The accompanying photograph shows his present condition of blindness, bilateral facial paralysis, drop wrists, and clawed hands.

CASE No. 2

A white man, born in 1880, recalls that as a boy he sustained several painless injuries. At the age of five he was struck in the head with a brick and at the age of 12 cut his left foot on a broken bottle without feeling any pain. He states that his family physician explained these painless injuries to his parents by telling them that he was born with abnormally twisted nerves. He remembers that from early youth his hands and feet felt numb. As he grew older his fingers began to contract.

It was not until 1919 that Dr. Dyer saw him and made a diagnosis of leprosy and had him admitted to the Louisiana Leper Home. At that time he was weak and run down and had ulcers of the feet. Six months later, when he had regained

his strength and the ulcers had healed, he absconded.

For 19 years he was able to earn a living and traveled into several States. Finally, in California, he sought treatment at the Los Angeles County Hospital for painless burns of the feet. The diagnosis of leprosy was again confirmed and he was returned to the National Leprosarium.

At present there is anesthesia of the scalp, face, all four extremities, and some parts of the body. Neurotropic bone absorption has resulted in shortening of the feet, and there is a large tropic ulcer of the left foot. The hands are atrophic and clawed, with shortened fingers. Extensive facial paralysis has occurred. Even if it is considered that the manifestations of neural leprosy were not established until the age of 12 years, he has had the disease for 51 years. If the age of five is regarded as the time of onset, leprosy has persisted for 58 years. The disease is still active, and bacteriologic smears positive for *M. leprae*.

CASE No. 3

A white seaman was first admitted to the Louisiana Leper Home in 1895, at the age of 38 years, but remained there only four months. His next admission was in March 1906, at which time a history was obtained dating the onset of the disease to an inflammation and numbness of the big toe 12 years previously. This was followed by muscular atrophy of the feet and hands.

The disease, remaining neural in type, has now been present for 48 years. It has resulted in extensive anesthesia of the limbs, clawing of the hands, bone absorption of the feet with drop feet, and a facial paralysis. The last positive bacteriologic smears for *M. leprae* were reported in 1926.

CASE No. 4

A white woman, 64 years of age, was first admitted to the National Leprosarium in 1927. She stated that she noted circinate macules on the face, right knee, and back at the age of 18 years.

The progress of the disease has been slow, and it was not until she was 30 years old that she became aware of a loss of sensation in the hands and feet. Since then she has had repeated attacks of ulnar neuritis. Gradually her fingers began to contract and a troublesome callous plantar ulcer developed in her left foot. After 10 years of hospital treatment the ulcer healed and she was discharged as an arrested case.

The following year she was readmitted voluntarily for a reactivation of the disease and a recurrence of the perforating ulcer of the left foot. Since skin smears are still positive for *M. leprae*, neural leprosy has been periodically active for 46 years.

CASE No. 5

A white woman, 49 years of age, was first admitted to the Louisiana Leper Home in 1904 at

the age of 14 years. The onset of leprosy occurred two years earlier in the form of macules on the chest, abdomen, arms, thighs and legs. Later anesthesia of the hands and feet was noted, then a gradual flexion contraction of the fingers.

At present there has developed complete absorption of the fingers of both hands, partial absorption of the toes with clubbing of the feet, a tropic ulcer of the right foot and complete anesthesia of all limbs and the greater part of the body. The last positive bacteriologic examination was recorded in 1926. This patient has suffered from the neural type of leprosy for at least 41 years.

As further evidence of the chronicity of leprosy, it is interesting to report an additional case of neural leprosy of 28 years' duration prior to admission to the National Leprosarium.

CASE No. 6

A white woman, 48 years of age, states that she first noticed the appearance of circinate macules on the face and chest when she was 20 years old. At the time she consulted a physician, who made a diagnosis of leprosy and advised her to go to the Louisiana Leper Home for treatment. Instead of following his advice, the patient preferred to remain at home and treat herself. This she continued to do while the disease became gradually more advanced. Finally, when an acute cellulitis of the feet set in, with which she was unable to cope, she applied for admission to the National Leprosarium.

The entrance examination showed an advanced mutilating form of neural leprosy with anesthesia, much bone absorption of the hands and feet, infected tropic ulcers of the feet and partial facial paralysis.

SUMMARY

1. A report of 55 patients with leprosy who have survived the disease over 20 years, comprising 14 per cent of the present population of the National Leprosarium, well demonstrates the chronicity of leprosy.

2. This chronicity is more characteristic of the neural type of the disease, which accounts for 38 of the 55 cases, although neural leprosy affects less than 30 per cent of the total number of patients at the Carville leprosarium.

3. The five cases with the longest chronicity, varying from 41 to 53 years' duration, are all of the neural type.

REFERENCE

1. Fox, H.: Clinical notes, *Arch. Dermat. & Syph.*, 46:4, 1942.

AMERICAN CONTRIBUTIONS TO NEUROSURGERY*

CHARLES WILSON, M. D.
NEW ORLEANS

"Surgery of the brain is the outgrowth of three discoveries of the nineteenth century: anesthesia (1846), asepsis (1865), and cerebral localization. Without asepsis (or antisepsis) surgery of the brain would never be possible. With asepsis and without cerebral localization, it could be of but little value. With both asepsis and cerebral localization and without anesthesia, it would be possible but greatly limited." (Dandy).

Cerebral localization had its inception in 1861 when Broca made his brilliant conclusions from careful observations of a patient with aphasia in whom a tumor in the area now known by his name was found at autopsy. "In 1870, Fritsch and Hitzig applied an electric current to isolated points on the exposed brain of a dog and observed focal responses in the contra-lateral extremities. This observation was destined to revolutionize the methods of investigation and knowledge of cerebral functions." The work appeared at a time when a heated controversy existed between the leading physiologists of the day over cerebral localization. Goltz had demonstrated that his decerebrate dogs could wink, swallow, and walk, in the entire absence of the cerebral cortex, and Claude Bernard had observed both ipsilateral and contralateral signs referable to tumors in only one cerebral hemisphere. Bernard felt that cortical control was a function of the whole brain and not of any one of its parts. It is rather surprising that so able a physiologist as he was did not test the theory of cerebral localization by the simple means of electrical cortical stimulation. There had accumulated some evidence of the contralaterality of cortical control before the work of Broca and of Fritsch and Hitzig. Mistecheili (1709) and Petit (1710) had independently

*Presented before the History of Medicine Society, Tulane University, February 26, 1943.

described the decussation of the pyramidal tracts in the medulla, and Pierre Marchettis (1666) is said to have cured a case of contralateral hemiplegia by removing a depressed fragment of the skull. Cruveilhier, in 1829, suspected a right frontal lobe tumor in a patient showing frontal headache, feebleness of the mind, slow speech, and weakness of the left leg. The patient was demonstrated to the students. At autopsy, a right frontal dural endothelioma was found, thus proving the diagnosis. In 1873, Ferrier, who was then working obscurely in the West Riding Lunatic Asylum, published an epoch making paper, describing in detail constant focal response in the contralateral extremities obtained by stimulating fixed and well mapped points in the motor areas of dogs, cats, rabbits, and other animals . . . "So carefully were his experiments performed that their correctness has since been repeatedly confirmed, and Ferrier's then revolutionary thesis remains unchallenged." At the Physiological Section of the International Congress of Medicine in London, 1881, Ferrier demonstrated a monkey made hemiplegic by removal of the cerebral cortex on the contralateral side of the brain. As the monkey limped on the stage Charcot gasped, "It is a patient."

Bartholow of Cincinnati was the first to demonstrate the response to stimulation of the human cortex (1874). His patient had a carcinoma of the scalp which had destroyed the parietal bone. Bartholow punctured the dura with his electrodes and stimulated the pre-Rolandic area, producing contralateral local and spreading muscular contractions and even convulsions. He thus confirmed the earlier observations of Hughlings Jackson who described the focal seizures in the epilepsy that bears his name. During the next 30 years, some 74 cases of cortical stimulation in the exposed human brain were reported. In 1902-03, Charles Sherrington mapped out the areas of motor localization in the great anthropoid apes. It is interesting that subsequent maps of the human brain showed a certain area of cortical control which is not really

present as described, and reflected the influence of Sherrington and his ape brains. Several of these 74 cortical stimulations elicited leg movements from stimulation of the upper part of the motor area on the convex surface of the cerebral hemisphere, but it is evident now that in such cases too strong a current was used or a tumor was present which distorted the leg control area, for this area, contrary to even recent neuroanatomic teaching, lies on the medial surface of the cerebral hemisphere, down deep in the great longitudinal fissure. Scarff, utilizing rather amazing exposures of the cerebral cortex and invading the dangerous median longitudinal area where hemorrhage from the superior sagittal sinus and its tributaries is the fearful outcome of a slight misstep, has outlined this previously mis-described area (1940).

Following the discovery of the motor area of the cortex, the sensory, auditory, visual, word-imagery, and olfactory areas were described in rather rapid succession. Even today, however, for all our knowledge of areas of cortical control, only about 80-85 per cent of intracranial tumors can be correctly localized from the neurologic signs and clinical symptoms alone. The remainder require the application of special procedures, such as Dandy's ventriculography, olfactory tests, ophthalmologic studies, and psychometric tests.

Surgery grew out of its infancy into adulthood when a bacteriologist showed that suppuration was caused by microorganisms and that microorganisms could be killed and infection obviated. On August 12, 1865, Lord Joseph Lister used a phenol spray to disinfect the air of his operating room, to sterilize hands and instruments, and to saturate the wound. The wound of the patient healed by first intention, without "laudable pus", without fever, and more quickly than before. Thus was antiseptic surgery born, and from it gradually evolved the modern principles of asepsis. It now became possible to enter any of the body cavities, without fear that death was almost certain.

The first operation for the removal of a cerebral tumor which was diagnosed by neurologic methods was in 1884, when the surgeon Rickman Godlee, on the advice of the neurologist Hughs Bennett, opened the skull of a young man and extirpated a tumor, a subcortical glioma. This unheard of feat attracted a great deal of attention. The *Lancet*, (December 1884:1090) bore a report of the operation even before Godlee and Bennett were ready to publish. This note, entitled "Excision of a Tumor from the Brain", makes interesting reading:

Excision of a Tumour from the Brain (Under care of Dr. H. Bennett and Mr. R. J. Godlee). The *Lancet*, December 2: 1090. (Hospital for Epilepsy and Paralysis, Regent's Park.)

During the last few weeks several notices have appeared in various medical papers concerning a man at present in the above hospital, from whose brain a tumour has been successfully removed. This operation, performed we believe, for the first time in the history of medicine, has attracted much notice amongst the profession, and numerous inquiries have been made as to the truth of the reports. Pending the termination of the case, and the more complete and scientific account of it which Dr. Bennett and Mr. Godlee will doubtless subsequently publish, we are in a position to furnish our readers with the following brief narrative of facts.

Young man, aged 25. C. C. Paralysis of left arm.

Four years ago, blow on head with timber (left side; slight effect).

Three years ago, slight twitching on left side of face and tongue.

Fit, beginning in left face, extending down, ending in convulsion and coma. These occurred about once a month for the next two and a half years.

Six months ago, twitching of left arm and hand. Weakness.

Three months ago, twitching of left leg. Weakness. Violent headaches.

P. E. Double optic neuritis.

These briefly stated are the chief symptoms which this patient presented. Combined with a general consideration of the facts of the case they led Dr. Bennett to arrive at the following conclusions. First, that there was a tumour in the brain; secondly that this growth involved the cortical substance; thirdly, that it was probably of limited size, as it had destroyed the centres presiding over the hand, and only caused irritation without paralysis of the centres of the leg, face, and eyelids which surround it; and fourthly, that it was situ-

ated in the neighbourhood of the upper third of the fissure of Rolando.

Accordingly, on November twenty-fifth, Mr. Godlee trephined the skull, and removed a triangular piece of bone over the region corresponding with the upper part of the fissure of Rolando. The surgical details need not be entered upon. It is at present sufficient to say that even after the bone was removed, the dura mater slit up, and the cortex of the brain exposed, no tumor was visible. The ascending frontal convolution, however, seemed to be somewhat distended. An incision about an inch long was made into the grey matter in the direction of the blood vessels, and a quarter of an inch below the surface a morbid growth was found. This was carefully removed and proved to be a hard glioma about the size of a walnut . . . The hemorrhage was arrested by the galvano-cautery and the wound brought together by suture.

(In *Lancet*, 1885, 1:13 and 891, it is reported that the man died a month later of infection at the site of the wound, following in the wake of a mild fungus cerebri.)

At the presentation of the paper, Ferrier reported an intracranial operation by Lister. The latter had trephined over the right frontal region in a patient with increased intracranial pressure and suspected of having a right frontal lobe tumor. On opening the skull the brain protruded markedly at an alarming rate. Lister introduced a finger into the mass and entered the dilated right ventricle, allowing a considerable amount of cerebrospinal fluid to escape. This was followed by a reduction in the cerebral hernia. Although there was immediate postoperative relief, and perfect wound healing, the patient died in eight days, and it was discovered at autopsy that Lister's finger had missed feeling the tumor by half an inch.

Also present at the above meeting were MacEwen and Victor Horsley, both destined to be pioneers in the field of neuro-surgery. MacEwen, in 1876, had diagnosed a frontal lobe abscess in a patient and proposed operation. The family of the patient refused. At postmortem, MacEwen performed his proposed operation and substantiated his diagnosis and showed the validity of his proposed procedure. Horsley had already done a considerable amount of work on the monkey at the time of the report.

Following Godlee's and Bennett's report, surgeons became bolder in attacking intracranial tumors. The next year (1885), Francesco Durante reported another operative attempt; in 1886, Horsley reported ten intracranial operations; and two years later, MacEwen startled his audience by reporting 21 operations of the brain with 18 recoveries. W. W. Keen, of Philadelphia, the pioneer American neurosurgeon, reported the successful removal of a meningioma in 1888. This patient was well 30 years later. Three years later (1891), Keen reported five additional cerebral operations. R. F. Weir (1887) reported the unsuccessful attempt at removal of a brain tumor; the Rolandic area of the brain was explored at operation, although the tumor proved at autopsy to be located in the cerebellum.

Ernest von Bergmann, in 1898, reported on the results of 273 collected cases, with only a 38 per cent survival. His pessimistic report marked the end of a wave of enthusiasm over cerebral surgery. In the hands of such men as Krause, Horsley, MacEwen, and Keen, many advances were made, but as the end results of operations for cerebral tumors were viewed critically, it was apparent that brain surgery had little to offer most patients. Even Horsley, a born optimist, had failed to convince his neurologic colleagues, who turned their tumor cases over to him reluctantly and only as a last resort.

The whole subject lay under a shadow. Fewer operations were being performed and even these were frequently unsatisfactory. No one thought of limiting his endeavors to cerebral surgery, and even Horsley was getting busy with other duties of a general practice. In the medical and surgical records of Johns Hopkins Hospital up until the beginning of 1901, the diagnosis of brain tumor was made only 32 times in about 36,000 patients admitted during the previous decade. Thirteen of these were transferred to the surgical wards and of these only two were operated on, both unsuccessfully; in eight, the tumor was disclosed at autopsy without previous opera-

tion; and in the other three cases the presumed diagnosis was never verified.

Then came the genius of Cushing—and the dawn of neurosurgery as we know it today. Harvey Cushing was serving as intern at Massachusetts General Hospital in the middle 1890's when the heavy clouds of pessimism were settling over surgery of the central nervous system. It was in his internship that he showed the first real signs (in Harvard he had been a mediocre student) of the qualities of the leadership he was to assume. His clinical notes, case histories, and records bore a stamp of originality and were graphically illustrated by numerous free hand drawings of the clinical findings and operations. They were characterized by artistry and exacting care in preparation. The young doctor was one of the first to use the crude x-ray machines then in existence—a machine that required the operator to crank it vigorously in order to produce the required current. His careful recording of the changes in blood pressure, pulse, and respiration during general anesthesia was a precursor to the modern anesthetist's chart.

In 1896 Cushing took a residency at Johns Hopkins Hospital under William Stewart Halsted where he remained until 1900. Coming under Halsted's influence for the first time, Cushing was introduced to a new type of surgery: absolute hemostasis, painstaking care in the handling of tissue, slow deliberate surgery which held time to be of secondary importance to care. Initial misgivings gave way to enthusiastic support, and Cushing became one of the most ardent advocates of careful, painstaking surgery—certainly an essential technique for intracranial operations.

In 1900, Cushing went to Europe for further study. He first visited Victor Horsley in England, but was disappointed in finding that the great Horsley had lost much of his interest in cerebral surgery and was turning away to the absorptions of general practice. Leaving England, Cushing went to work in Kronecker's Laboratory in Berne, Switzerland. Finding him interested in cerebral physiology,

Kocher put him to work on intracranial pressure experiments: valuable training with far-reaching effects on the young enthusiast. Regarding his sojourn in Europe, he remarked that he worked "undistracted by the responsibilities of patients, with no thought awake or asleep, beyond the single problem at hand." Early evidence this, of that power of concentration which was among his greatest faculties. Following his stay in Berne, he visited Mosso's laboratory in Italy (Turin); and he worked for four months in Sherrington's laboratory, at Liverpool, on problems related to the motor cortex of anthropoid apes.

Returning to Johns Hopkins he once more joined Halsted's staff and startled his chief by announcing his intention of devoting himself exclusively to surgery of the central nervous system. In addition to the "fact" that neurosurgery offered little to the unfortunate patient, it was thought that there were not enough patients in this category to justify anyone's exclusive devotion to this field.

"As an interne he had seen the inadequacy and hopelessness of operations on the brain as carried out at that time—a small trephine opening at a point on the patient's skull indicated by the neurologist—and of course no lesion found."

Cushing early grasped the fact that if anything was to come of neurosurgery, it must come from men who had a grasp of both neurology and the technics of surgery. As he himself said: "Whatever his specialty may happen to be, it is only when a surgeon is shouldered with the responsibility of acting largely on his own diagnosis that he will be impelled seriously to study his own cases before they come to the operating table and will be inclined to follow the results of his procedures to the end to see wherein his mistakes can be rectified on subsequent occasions."

Starting with only a few patients marked as "possible neurosurgical candidates" and with but a few beds in the Neurology Ward, Cushing set about devoting himself to problems of birth paralysis, epilepsy, hydrocephalus and the like. Of brain tumors

there were but few; from 1901 to 1913 he had but 194 verified tumors.

Cushing records his first case of intracranial tumor as follows:

A well nourished but undersized and sexually undeveloped girl 16 years of age was admitted to Dr. Osler's service at the Johns Hopkins Hospital on December 12, 1901, with the complaint of headaches and failing vision. She had a peculiar waxy appearance of the skin which suggested nephritis, and though the urine of low specific gravity was considerably increased in amount, no renal elements were ever found. The optic nerves were said to show atrophy with superimposed oedema; and constriction of the visual fields, though not plotted, was apparent on rough tests.

On February 21, March 7 and March 17, 1902, under the encouragement of my then neurological colleague, the late H. M. Thomas, three exploratory operations were performed. They served merely to disclose an internal hydrocephalus. The patient became increasingly stuporous, developed quadripedal rigidities, and finally died on May 1, of inanition with a terminal pneumonia. There was found at autopsy a tumor of the interpeduncular region which was diagnosed by Dr. Welch as a teratoma arising from an anlage of the pituitary body.

The postmortem disclosure of this wholly unsuspected and apparently inoperable tumor was highly disconcerting and made on me a deep impression. Interest was further aroused by Frohlich's description in the same year of a pituitary tumor associated with what was called adiposogenital dys trophy rather than the acromegalic changes supposedly produced by a tumor in this situation. This coincidence was what incited my long-time interest in pituitary disorders.

By 1908, Cushing had become a leader in his field. Using Esmarch's bandage to control scalp bleeding, Obalinski Gigli's flexible saw (originally designed for pubiotomy) to cut between openings made by Doyen's burrs, Horsley's bone wax (1908) to control bleeding from the diploë, and a modification (Bovie) of the "Potzi" fulguration unit to control hemorrhage from small vessels in the brain, he constantly sought to improve his technic, diagnoses, and operative results.

While other men reported operations which were frustrated by hemorrhage, Cushing assiduously set about conquering this dangerous annoyance. He was one of the first to adopt Horsley's bone wax and to see its simple splendor. Krause, in a

three volume monograph published in (1909), mentions Horsley's wax, stating he had never used it, and describing complicated, time-consuming and futile methods of controlling bleeding from the diploë and venous sinuses of the skull. Cushing also was the first to abandon the complicated methods (bandages, tourniquets, flap clamps and so on) of controlling scalp bleeding, and perfected the method now in use, of digital compression and clamping the galea. In 1911, he reported the use of the silver clips which now bear his name. He reported the improvements in hemostasis and comments: "The successful consummation of any critical operation often depends on seeming trifles. It is, however, the scrupulous observance of surgical minutiae that makes possible the safe conduct of major intracranial performance—performances which a few years ago were attended in most cases by a veritable dance macabre."

With perfection in his technics for controlling hemorrhage, Cushing found he was able to go deeper, search further, extirpate more widely, and conduct the performances more safely than had ever been attempted before.

Not all tumors can be removed surgically. But small growing tumors sometimes result in early blindness. Here, Cushing's palliative subtemporal decompression (1905) prolonged the lives and spared for months or even years the eyesight of hundreds of victims of inoperable tumor of the brain. Earlier attempts had resulted in the horrible "fungus cerebri" which was the spectre confronting the surgeon and patient in misguided attempts to relieve the ever increasing pressure within the cranial cavity.

In 1912, Cushing published his classic "Pituitary Body and Its Disorders." This was but a marker in his life-long interest in the pituitary gland, an interest born of his first neurosurgical case. He perfected methods of diagnosis to a fine point and in his verified tumor series, pituitary tumors stood second in frequency (17.8 per cent) of intracranial neoplasms. He described the

syndrome associated with pituitary basophilism—"Cushing's syndrome."

Cushing was more than an investigator and clinician—he was a superb teacher. When he became an assistant in surgery under Halsted he was also given a teaching assignment in Johns Hopkins. One of his courses, that of experimental surgery, was the most outstanding course in the Junior and Senior classes, though it was purely elective. But in addition to teaching undergraduates, he organized and directed the new department of neurosurgery. And a hard task master he was. "Eyes on the ball!" jerked many a wandering mind back on the "qui vive." He personally directed preoperative study, the history, physical examination, and x-ray studies of patients before operation. "The operation itself was both an artistic and a technical masterpiece. No pains were too great to make the procedure perfect . . . Time was no element: three to five hours at the operating table were usual for major procedures, whereas in unusually difficult operations, seven to eight hours might be consumed!" Post-operative care was no less intensive and thorough. "It was this unending care and ceaseless work it entailed which seemed hard to his pupils, since they shared the work, and much was expected of them . . ."

"And what did all these pains accomplish? It reduced the mortality for operations on the central nervous system to the lowest figure in history and gave to the patients who came under Dr. Cushing's care a better chance of being cured or relieved for a longer period of time than they would have had in any other hands. It not only established modern neurosurgery by carrying this surgical specialty far beyond the pioneer efforts of Sir Victor Horsley, but it inaugurated a school of neurosurgery which carried the teachings of the master to the ends of the world." (Horrox).

A mere list of the names of Cushing's pupils is sufficient to inspire respect, for nearly every one has created a name for himself, and many occupy important positions in neurosurgery today. Dandy, Fra-

zier, Horrax, Penfield, Sachs, and Rand are names which merely begin the long list.

Walter Dandy, like Cushing and most other neurosurgeons, began by working on problems such as birth paralyses, epilepsy, and hydrocephalus. From the latter investigation came one of the most important developments of the century in methods of localization. Dandy and Blackfan (1913), working under Cushing, proved for all time the important site of formation of cerebrospinal fluid and its circulation through the ventricles, foramina, and aqueduct of the brain. It is safe to say that without this vital information, neurosurgery would still be 20 years behind its present development. Continuing his investigations in the "third circulation", Dandy developed and perfected the method of pneumoencephalography, almost a *sine qua non* in the exact localization of cerebral tumors. Although the discovery, a by-product of a series of studies on experimentally induced hydrocephalus, was largely accidental, much credit goes to Dandy for immediately grasping the clinical possibilities, and for his courage in perfecting the dangerous technic to the point where today it is a relatively harmless procedure. Many other advances have sprung from Dandy's hand: cauterization of the choroid plexus in hydrocephalus, cannulation of the cerebral aqueduct, important contributions to pathology and diagnosis of cerebral neoplasms, are but a few from many.

Percival Bailey worked with Cushing on the difficult problem of classifying cerebral neoplasms. Their work on classification, though since challenged, remains the best available today ("A Classification of Gliomata," 1925). Bailey was with Cushing from 1919 to 1928. In 1922, Bailey was made head of a pathology department devoted exclusively to the study of intracranial tumors. Bailey's "Intracranial Tumors" (1933) was published after he left Cushing; his place was taken in 1928 by Eisenhardt, who later became Director of the Cushing Brain Tumor Registry at Yale (1933). Eisenhardt devised many important methods of study and differentiation of patho-

logic tissue, and it was through her that Cushing was able to collect and publish his classic "Intracranial Tumors" (1932) which was a collection and analysis of 1000 verified tumors of the brain, with case histories and "follow-ups."

The New York school of neurosurgery deserves mention. Some of the earliest operations in this country were performed by Arpad Gerster at Mount Sinai. In 1892, Frank Hartley independently described the operation for the intracranial exposure of the Gasserian ganglion, which was also described by Fedor Krause. In 1903, Robert Abbe, surgeon to St. Luke's Hospital, gave an account of the operation of "neurectomy" of the intracranial branches of the trigeminal nerve. The operation developed by Hartley and Krause was used for the relief of the painful affliction known as "tic douloureux".

C. A. Elsberg in New York has been the outstanding figure in diseases of the spinal cord. In diagnosis, pathology, and treatment his book is the authoritative source. He is perhaps to surgery of the spinal cord what Cushing was to surgery of the brain. In New York too are A. S. Taylor who developed the technic of the operation for birth paralysis of the brachial plexus and described (independently of Alessandri and Bonome of Italy) the operation of hemilaminectomy, so widely used today in the approach to ruptured nucleus pulposus; (Horsley in 1887 perforated a laminectomy for a cord tumor) Byron Stookey who has made notable contributions to surgery of the trigeminal nerve; Scharff, already mentioned, and others.

To C. H. Frazier goes credit for describing the most popular operation today for trigeminal neuralgia—intracranial section of the posterior root, sparing the motor root and surgically differentiating the three divisions of the nerve. (Olaf Sjoqvist in 1938 presented nine cases of trigeminal neuralgia ("tic douloureux") in whom "intra-medullary tractotomy" had been done. This work has been extended and improved by F. C. Grant of Philadelphia, who in 1941 reported 19 cases so treated.)

The list grows long and perhaps not too much is to be gained by extending it. Let us note, in passing, that the United States had dominated the development of neurosurgery almost until the present time. Until recently it was a specialty only in the United States. In Great Britain, in spite of the influence of Horsley and the Hospital for the Paralyzed and Epileptic in London, neurosurgery was not a specialty for many years. Percy Sargent, who succeeded Horsley at Queen's Square in London, told Elsberg that he did not believe there were enough cases to justify a separate service. In France, the lamented DeMartel (who incidentally was the first to use local anesthesia) although a skilled operator on the brain and cord, remained a general surgeon to his death (by suicide, the day the Germans took Paris.)

In Germany, although Krause made a brilliant start, neurosurgery as a specialty did not "take hold" until recent years.

Since Cushing's death (coronary occlusion) in 1939, his brain child has continued to grow with vigor and enthusiasm in many parts of the world. His prediction for specialization within the "specialty" has been amply confirmed. Much has been accomplished but as much more remains to be done.

BIBLIOGRAPHY

- Bailey, P.: *Intracranial Tumors*, Springfield, Ill., Charles C. Thomas, 1933.
- Bailey, P.: Harvey Williams Cushing, *Arch. Neurol. & Psychiat.*, 42: 1140, 1939.
- Bennett, H., and Godlee, R. J.: Excision of a tumor from brain, *Lancet*, 2: 1090, 1884; *Lancet* 1: 13 and 891, 1885; *Brit. M. J.*, 1: 19 and 988, 1885.
- Cushing H.: *Studies in Intra-Cranial Physiology and Surgery*, London, Oxford Med. Publications, 1925.
- Cushing, H.: Control of bleeding in operations for brain tumors (use of clips), *Ann. Surg.*, 54: 1, 1911.
- Cushing, H.: The purpose and technical steps of a subtemporal decompression. A. J. Ochsner, *Surgical diagnosis and treatment*, 1: 407, 448; Philadelphia, Lea & Febiger, 1920.
- Cushing, H.: *Intracranial Tumors*, Springfield, Ill., Charles C. Thomas, 1932.
- Dandy, W. E.: Ventriculography following injection of air into cerebral ventricles, *Ann. Surg.*, 68: 5, 1918.
- Dandy, W. E.: *The Brain*. Dean Lewis, *Practice of Surgery*, Vol. 12, ch. 1.
- Davis, L.: *Neurological Surgery*, Philadelphia, Lea & Febiger, 1942.
- Elsberg, C. A.: Development of neurosurgery in New York during the past 25 years, *J. Mt. Sinai Hosp.*, 9: 413, 1942.
- Horrax, G.: Harvey Williams Cushing, *Surg. Gynec. & Obstet.*, 69: 828, 1939.

Horsley, V.: Note on hemostasis by application of living tissue, *Brit. M. J.*, 2:8, 1914.

Horsley, V.: On technique of operations on the central nervous system, *Brit. M. J.*, 2: 411, 1906.

Horsley, V.: Ten cases of operation on the brain, *Brit. M. J.*, 1: 863, 1887.

Keen, W. W.: Five cases of cerebral surgery, *Am. J. Med. Sci.*, 102: 219, 1891.

Keen, W. W.: Three successful cases of cerebral surgery, *Am. J. Med. Sci.*, 96: 452, 1888.

Kennedy, J. C.: Harvey Williams Cushing, *Univ. West Ontario M. J.*, 11: 125, 1941.

Penfield, W.: Harvey Williams Cushing, *Yale J. Biol. & M.*, 12: 323, 1940.

Sachs, B.: Harvey Williams Cushing, *Bull. New York Acad. M.*, 15: 813, 1939.

Scarff, J. E.: Primary cortical centers for movements of upper and lower limbs in man, *Arch. Neurol. & Psychiat.*, 44: 243, 1940.

Weir, R. F.: Unsuccessful attempt at removal of sarcomatous tumor from the brain, *Med. News*, 50: 273, 1887.

UNDULANT FEVER

ITS EPIDEMIOLOGY AND DIAGNOSIS

P. K. THOMAS, M.D.

Tupelo, Miss.

Undulant fever is a disease that is universal in its distribution and in every port of the world it is known by a different name. A few of these synonyms are: dust fever; brucellosis; Malta fever; Mediterranean fever; goat fever; contagious or infectious abortion of cattle; Texas fever; Rio Grande fever.

By definition, Cecil's textbook says: "Undulant fever is an acute and chronic disease of varied duration with protean manifestations, characterized by fever, weakness, sweating, and aches caused by a general infection with a member of the abortus group micro-organisms" and in Musser it says that it "has an insidious onset, with a prolonged remittent or undulating type of fever, loss of weight, anemia, splenomegaly, a low mortality rate and a prolonged convalescence."

Brucellosis itself is no new disease, although within the last 15 years it has gained a place of great importance, with a great number of new cases being reported each year which is probably due to more specific and accurate diagnostic laboratory procedures. Spanning the pages of medical history we find descriptions of "fevers of unknown origin" as far back as Hippocrates' day, that could easily fit the clinical picture

of many cases of the chronic brucellosis that is seen today.

ETIOLOGY

Cleghorn, in 1751, gave an accurate description of acute brucellosis, including the autopsy findings. Burnett in 1810, Hennen in 1816, Heastie in 1830, and Davy in 1842, were among the first contributors to establish the true antiquity of the disease. Burnett, in 1814, wrote a description of "Bilious Remittent Fever" of the Mediterranean, differentiating it from malaria because the former did not respond to "bark infusions."

It was during the Crimean War that the disease first attracted great attention, and Marston, who suffered from the fever himself, gave great study to the infection, differentiating it as a separate and distinct clinical entity from typhoid in 1863.

Bruce, in 1886, isolated a coccoid organism from the spleen of patients dying with brucellosis and by culturing the organism produced the disease in monkeys from his cultures. Also by injecting the blood of living infected patients into monkeys he also produced the disease in the animals. Bruce called this organism *micrococcus melitensis*.

In 1897 the contagious abortion in cattle was found to be due to an organism named *Bacillus abortus* by Bang of Denmark. It was not until 1917, however, that Evans showed by cultural methods that the *Bacillus abortus* of Bang and the *micrococcus melitensis* of Bruce were the same morphologically, biochemically and antigenetically.

Musser and Sailer, in 1899, described the first cases in this country in men returning from the tropics. In 1904, Craig described the disease in soldiers returning from the Philippines. Also he described the first case occurring in this country in a patient, a nurse, who had never been out of the United States or been in contact with "Malta fever" patients. At this time he suggested that the "typhoid like" cases in this country were probably due to brucellosis and from that time on an increasing number of cases have been reported.

Gentry and Ferenbaugh, in 1911, reported a few cases in the goat raising areas of

Texas, New Mexico, and Arizona, while in 1922 Lake and Watkins described an epidemic in Phoenix, Arizona, traced to infected goat's milk.

In 1924, Kiefer reported the first case due to the *bacillus abortus* of cattle, and in 1927 Carpenter isolated an organism indistinguishable from *B. abortus* in five cases diagnosed clinically as brucellosis. Carpenter cultured these organisms and injected the cultured micro-organisms into five pregnant heifers which promptly aborted. Prior to 1927 brucellosis was considered a medical curiosity appearing only in endemic infections in goat raising areas, such as Texas, New Mexico, Arizona; but with Carpenter's experiment one can easily see how the eyes of physicians over the entire world were opened to a possible diagnosis of "unexplained fevers."

EPIDEMIOLOGY

The cause of undulant fever is the *Brucella* organism. This is a non-motile, gram-negative, pleomorphic organism, sometimes coccoid in character and again appearing as bacillus. It grows slowly on first isolation culture and requires special media. The organism does not ferment sugar and is very resistant to drying.

There are three strains of the organism: bovine, porcine, coprine; *Brucella abortus*, *suis*, and *melitensis*. *Brucella abortus* is infectious to cows, producing contagious abortion in cattle. It is also infective for sheep, goats, horses, dogs, rats, cats, guinea pigs, chickens and other fowl. There is hardly ever any acute symptoms seen in cattle unless a metritis or mastitis occurs. The blood may or may not be positive for agglutination.

Brucella melitensis produces an acute infection in goats and sheep, later passing into a chronic type of infection which may be detected by blood agglutination, culture or intradermal skin test reactions. If cows are infected with *Brucella melitensis* they do not abort but the organism may be passed out in the milk.

Brucella suis is infectious for pigs sometimes producing abortion in these animals. The American *suis* strain may infect cows

and when it does it is passed out in the milk. Other animals, such as horses, dogs, and fowl, are less often infected.

Brucella abortus is the primitive strain of the Brucellae organisms, the other strains having been developed through host adaptation.

There are then three important sources of infection from cows, goats and pigs. As these animals are domesticated in all parts of the world, it is easily conceivable that brucellosis is a universally known and diagnosed clinical entity.

There are four commonly known methods of the passage of the Brucella organisms to human beings. These are: (1) The ingestion of raw milk or dairy products, such as butter and cheese made from unpasteurized infected milk; (2) the handling of infected material; (3) the ingestion of contaminated uncooked foods; (4) contact with humans who have the disease.

Number three and four of the above may be discarded promptly, for even though meat is infected present day standards and government regulation inspection of meat and meat packing plants tend to prevent any kind of contaminated meat from reaching the consumers. Too, as people learn more and more the dangers of eating raw meat, there will be a lowered incidence of brucellosis.

There has never been a proved case of transmission of the disease from human to human, but as long as the Brucella organism is excreted in the urine and feces of an infected patient (this occurs in 10 per cent of cases), this is a possible method of spread of the disease.

At the present time the consumption of raw milk and dairy products is the chief source of infection. In the cities today there is less brucellosis than formerly because the state and city health laws requiring the pasteurization of milk has cut down this source of infection tremendously. But in the country, where the population does not have the facilities for pasteurization and in many areas have not had the education concerning the value of pasteurization of milk, there occurs the greatest number of cases of bru-

cellosis. It is estimated that today ten million people are exposed to brucellosis infection through the ingestion of raw milk alone. As for example Algie, Angle, Baumgartner and Lunsford tested 7,122 school children with intradermal skin test and 9 per cent reacted positively. Out of this 9 per cent, 79.3 per cent drank raw milk. Gould and Huddleson observed 845 positive reactions out of 8,124 persons tested or a total of 10.3 per cent. Most of these people were from institutions that consumed raw milk or dairy products made from raw milk.

There is some controversy at the present as to whether cheese and butter made from sour cream or milk are capable of spreading the disease. Some people believe that souring of cream kills the Brucellae organisms and that only those products made from raw unsoured milk are capable of causing the spread of the disease.

Persons who are infected by direct contact with contaminated material are usually veterinarians, goat herders, farmers, packing house employees, and laboratory workers.

Veterinarians and dairy workers who handle infected cows and the products of an abortion from these cattle are frequently in direct contact with the organism. It is known that the placental and fetal tissues of such an abortion are occasionally loaded with the Brucella organisms and that these organisms can easily enter the body through skin abrasions, or by way of the gastrointestinal tract or pulmonary infection.

In meat packers there is a greater incidence of *Brucella suis* infection due to the fact that these people handle so much meat from pigs in packing plants. Also, it is known that the *suis* infection is much more virulent for man than is the *Brucella abortus* organism. The infection in these people seems to come most often from handling pork sausage and the reproductive organs of the infected animals.

Laboratory workers are the next of importance in the series of people being infected by direct contact with the Brucella organisms. The infection in these people is by way of accidental ingestion through the

gastrointestinal tract and by having abrasions or cuts on the skin through which the organisms can easily enter. Morales Oerto of Puerto Rico, by abrading the skin of human beings and inoculating these cuts with cultured organisms, produced brucellosis experimentally in man. This is probably an important portal of entry for the *Brucella* organisms in all persons in direct contact with the infected animals or *Brucella* organisms.

The incidence of brucellosis has gradually increased each year since the discovery in 1927 that the infectious abortion of cattle could be a clinical entity in humans. In 1927 there were 112 cases and in 1939 a total of 3,501 cases were reported. This increase in the number of cases is probably not due to an actual increase in the disease itself but is due to the fact that brucellosis is an endemic disease, present at all times, and that there are better and more accurate diagnostic tests than previously.

There is no age group or sex immune from brucellosis. It is less frequently diagnosed in smaller children and infants than at any age, but as Harris has suggested the cause for this is that the child is unable to give a very clear description of his symptoms and doctors do not think of the disease as often as they should.

Seventy to 90 per cent of the diagnosed cases are said to occur in males. Considering the number of cases caused by *suis* organism, it is obvious that brucellosis occurs often in veterinarians and meat packers, who are predominantly of the male sex, whereas those cases caused by *Brucella abortus* are found to be almost equally distributed in male and females who live in the city.

One of the greatest problems today is the stamping out of the infection among the dairy herds of the country. In the period from July 1, 1934, to April 30, 1937, the Bureau of Animal Industry tested by agglutination reaction 4,499,273 cows in the Southern states alone and found that 2,365,444 reacted positively to the test. Of

this number 52.5 per cent were in infected herds; remember that if only one cow in a herd of 2,000 is infected that one cow makes the entire herd a source of brucellosis infection.

In Mexico, where the animals were tested by intradermal skin tests, 24 per cent of the cattle, 30-35 per cent of the pigs and 15-40 per cent of the goats tested, reacted positively.

The *Brucella* organisms are not confined to their respective hosts for *Brucella suis* is infectious for cattle and is easily spread by cows' milk. Due to its virulence a relatively small number of these organisms will cause infection in man, whereas it takes a great number of *Brucella abortus* to cause infection. Also *Brucella suis* is infective for goats as is *Brucella melitensis* for pigs and cattle.

The *Brucella* organisms have been demonstrated in sheep, horses, mules, dogs, wild deer, squirrels, wild buffalo, rabbits and poultry. The presence of these organisms in the lower animals is not an important source of infection to humans, *per se*, but is of considerable interest to the farmers in that it can easily be a source of infection to their herds.

Insect transmission has been suggested as one method of the spread of brucellosis. This is based on the theory that many more cases are seen during late summer and early fall when insects are most prevalent. It has been shown that the biting stable flies and mosquitoes may carry the organism. Another explanation for the greater number of cases during both summer and early fall is the fact that calving occurs most frequently in early summer and there is greater output of organisms during lactation of early months just following and hence a greater chance of infecting more people. The clinical symptoms do not appear for about 30 days after infection.

The following outline summarizes the epidemiology of *Brucella* infection.

Infectious- ness and Methods of Trans- mission	Animals to man direct contact	{ cows goats swine sheep horses dogs	{ farmers dairymen slaughter-house workers veterinarians
	Animals to man; dairy products	{ milk (raw) cream buttermilk butter cheese ice cream	
	Mother's milk? The organisms have been shown in human milk but no evidence of infant infection has been reported from such.		
Water—As long as animals discharge organisms from their feces, bile and urine, water supply is a potential hazard. In Michigan State College in 1939, there was an epidemic of 41 cases with one death attributed to contaminated water supply.			
Usually endemic —	{	15-20 per cent of cattle in	
Occasionally epi- demic		U. S. infected.	
Distribution—World wide	{	10 per cent of humans in- fected (not all clinically ill).	
Incidence	{	Higher in rural regions	
		Urban population not exempt—raw milk in resorts	
		Greater in males—occupational?	
		All ages: Congenital—infancy to old age	
Incidence due to individual strains—varies with predominance of hogs, goats or cattle in given locality.			
Relative virulence	{	1. Melitensis (goats)	
		2. Suis (pigs)	
		3. Abortus (cattle)	

SYMPTOMATOLOGY

The often repeated statement that "syphilis may simulate or complicate any known disease" is equally true of brucellosis. It is a systemic disease and the organisms have been isolated from practically all tissues of the body. Due to its disseminated form, brucellosis either in acute or chronic form is capable of protean manifestations with extreme variation in duration, intensity and symptomatology.

The variegated symptomatology of brucellosis makes a definite classification of the disease very difficult and numerous

classifications have been made. I shall briefly describe the types as given by Hughes. They are:

1. Malignant type with sudden onset, high fever and stormy course which may result in death.

2. Undulatory type: The most frequent.

3. Intermittent type: Insidious and generally mild.

4. Irregular, mixed and chronic varieties.

Malignant type: Infections of this nature are rare. They are characterized by sudden onset, an acute course and according to the literature, usually a fatal termination. In most cases the temperature is high and sustained with an extreme hyperpyrexia occurring just before death. There is great prostration, severe headache, backache, marked anorexia and usually true rigors. The spleen is likely to be greatly enlarged. The duration of these cases may be two or three weeks. Some cases of acute brucellosis of this type which pass into chronic brucellosis, have been described.

Undulatory type: This type of brucellosis is most often due to *Brucella melitensis*. The case commences with vague aches, pains, weakness, anorexia and headache, and is often first diagnosed as "intestinal" or "summer flu." If temperature records are kept, one sees a slowly forming wave-like curve, with intervening periods of apyrexia. Scarcely is the patient over one such attack of fever and aches before he starts another such bout. This may go on and on seemingly indefinitely.

Intermittent type: Here is found those cases of brucellosis with insidious onset and a fever curve gradually forming a long rolling wave. The fever lasts for six or seven weeks, accompanied by the usual signs and symptoms of brucellosis, followed by a remission of all fever and clinical symptoms.

Irregular type: Under this type of brucellosis is placed the ambulatory patient in whom the symptoms are mild, such as weakness, lack of endurance, and irritability, but the patient is up and about his work. Also here occurs the asymptomatic or latent type in which the organisms have

invaded the body and are present as such but make their appearance as episodes of fever and illness when bodily resistance is lowered by some cause. Only too often the patient thinks he has the "flu."

The classical clinical picture of undulatory, remittent, intermittent fever, drenching sweats, chills, headache, backache, muscle and joint pains, weakness, loss of weight, palpable spleen (sometimes liver), leukopenia with lymphocytosis and secondary anemia and a skin eruption pertain chiefly to the acute febrile type of the disease.

The chronic type of brucellosis is usually ushered in with the prodromal symptoms of any febrile disease, as weakness, irritability, headache, vague aches and pains, slight cold, hacking cough and the appearance of fever. Anorexia, chilliness or rigors, constipation, marked weight loss, stiff or painful joints and backache commonly follow. As the disease progresses the fever rises more and more. In the morning the patient may be afebrile but as the day passes on the fever rises and the patient experiences drenching sweats, in such a degree as to cause a change of clothing in many cases.

McGinty and Gambrell have listed over one hundred and fifty manifestations of chronic brucellosis, but the principal ones present in the majority of cases were weakness, low grade fever, sweating, chilliness, and lack of objective physical findings.

A high proportion of cases reported by Hughes and Craig and later by Evans gave only vague symptoms of aches, pains, exhaustability, insomnia, and feverishness. These were patients with chronic brucellosis who had previously been diagnosed as "neurasthenics"; a warning to avoid the diagnosis of neurasthenia or neurosis without a careful survey of the patient.

There have been a few special symptoms brought out by Manchester that I would like to call attention to. Manchester took 100 cases drawn from rural groups of Ohio, in which part of the patients had been exposed to cows directly and part had been or were drinking raw milk; 38 per cent of

these reacted positively and 62 per cent negatively. It was found that 29 per cent of his 38 per cent gave a history of "recurrent grippé". Also these positive reactors gave a history of chronic low grade fever, night sweats, colds, angina pectoris, dyspnea, joint and muscle pains; in the negative group palpitation, chronic exhaustion, easy fatigability, nervousness, and gastrointestinal complaints occurred likewise.

One symptom found in this group of cases, and not previously mentioned, is that of coronary disease. This syndrome occurred in 26 per cent of the positive skin reactors and in 3.5 per cent of the negative reactors. The usual age of onset was 46 years and the average duration of symptoms was 6.5 years. The coronary or anginal syndrome usually follows an acute exacerbation of the brucellosis in which there has occurred a coronary arteritis with damage to the endothelium of the blood vessels and localized extravasations of blood. In many cases the coronary and anginal attacks were the first signs of brucellosis to be manifested.

Rheumatism or rheumatic pains are common accompaniments of brucellosis. In Manchester's series 55 per cent of the skin positive group and 20 per cent of the skin negative group showed widespread manifestations affecting most commonly the small joints of the hands, the wrists, the lumbar vertebrae and the knees. Swelling without redness or pain may occur; a few individuals show changes comparable with rheumatoid arthritis. Goldfain, of 50 people with arthritis, found 31 having active brucellosis. Nine (29 per cent) had atrophic arthritis, five had hypertrophic arthritis, one had an anklyosing spondylitis and seven had chronic fibrositis.

PHYSICAL SIGNS

The most characteristic feature of the physical signs of brucellosis is the lack of such signs. Many of the patients do not appear to be ill and except for the pallor, weakness and tired appearance they are comfortable and mentally alert. Even though the patient may be severely ill his

mentality is usually clear. The tongue is coated, the pharyngeal mucosa injected and rales may be heard in the chest, especially in the pulmonary bronchopneumonic type. Upon palpation, the abdomen is tender in about 20 per cent of cases and is usually accompanied by pain. A skin eruption similar to the typhoid rash may occur. It is usually a small pink macular rash but sometimes may be maculo-papular.

DIAGNOSIS

The final and accurate diagnosis of brucellosis depends upon the use of laboratory methods, of which the most important are:

1. Blood count.
2. Cultures of blood, urine, feces, and all exudates.
3. Animal inoculation test.
4. Agglutination test.
5. Intracutaneous skin test.
6. Opsonocytophagic index.
7. Complement fixation test.

Before turning to the laboratory as an aid to diagnosis, one should first obtain a most careful, chronologic and complete history from the patient with special emphasis on his occupation, as the highest incidence of this disease is in those people closely associated with or in direct contact with livestock or dairy products and meat packing industries. Also the patient should be carefully questioned as to the source of his milk, butter and cheese supply and the whereabouts of his residence.

Complete hematocytologic studies do not show anything peculiar or diagnostic of brucellosis. It is true that in acute brucellosis there is a leukopenia which will tend to limit the diagnosis somewhat to those diseases with a leukopenia, but in chronic brucellosis there may be a leukopenia, a normal leukocyte count and in some cases a leukocytosis. McIntire says that the white count is normal in one-half of the cases, leukopenia in one-third and leukocytosis in one-sixth.

Calder directs attention to the occurrence of lymphocytogenesis in all cases of brucellosis. It is the most striking and constant

feature of the blood picture in all the manifestations of brucellosis.

Lymphocytosis is evidenced by an increase in percentage and absolute number of lymphocytes—a lymphocytic “shift-to-the-left” so to speak.

Also Calder called attention to a mild hyperchromic macrocytic anemia, which was present in a great number of cases. He attributed this anemia to liver damage occurring during the disease. He also noted incomplete and delayed blood clotting without a thrombocytopenia, which suggest further study for liver damage.

To make a definite and unretractable diagnosis of brucellosis, it must be made by culturing the organism from the infected person. Cultures may be made from blood, urine, feces, spinal fluid, dermal eruptions, and pus of localized abscesses.

To make blood cultures one must use the most careful aseptic technic. Fifteen cubic centimeters of whole blood are drawn from the patient and placed in a flask containing 4 c.c. of 2.5 per cent sodium citrate solution. Into four flasks, each of which contains 100 c.c. of liver infusion broth at pH of 6.8, 2 c.c. of the citrated blood are placed. Two of the flasks are incubated under aerobic atmospheric room conditions at 37° C. and two of them are incubated in an atmosphere of 10 per cent carbon dioxide, for four days. After the fourth day, smears are made daily from the cultures and stained with gram stain for presence of the organisms. If after 10 days no organisms are found, 5 c.c. of the original culture are transplanted to 100 c.c. of liver broth infusion every three days for two weeks. Original culture and transplants are examined for three weeks before being reported as negative.

Blood cultures should be made frequently as in many cases with low grade fever there is a transient bacteremia. In the acute cases with fever, positive cultures are most frequently obtained. The *melitensis* organism seems to be the easiest to cultivate, and if it is the causal organism, the blood culture made during a pyrexial attack will invariably be positive.

At the present time there are very few laboratories equipped with facilities or personnel adequate for blood cultures diagnostic of brucellosis as there must be special media used and special precautions taken to secure positive cultures.

In the culture diagnosis from urine, bile, stool, pus and spinal fluid the materials are prepared for culture according to standard methods. Such material is inoculated on plates of liver agar containing gentian violet concentration of 1:200,000. Half the plates are incubated in carbon dioxide for three days, half in pure atmosphere and then examined by slide smear and gram stain for the organisms.

Animal inoculation method as described by Poston is that three guinea pigs are used for each patient, and in two of the pigs 2 c.c. of the patient's citrated blood are injected intraperitoneally and in one pig 1 c.c. of the patient's citrated blood is injected in the groin. Examination of the animals is carefully done daily and two months after the inoculation the animals are tested for specific agglutinins and positive skin reactions by use of the Huddleson brucellergen test at an interval of every few days. When both tests become positive the animals are killed and blood and tissue culture procedures carried out, as previously described. The animals that remain negative are killed four and one-half months after inoculation and blood and tissue culture procedures are followed.

It has been noted that many animals do not react positively until sixteen to eighteen weeks after inoculation, hence the test is of little value in the cases where a quick diagnosis is wanted.

Agglutination test: The agglutination test is one of the most widely used and little understood of all tests used. Like the Widal test it is simply a test for the presence of specific agglutinins in the blood and not for the presence of organisms. If agglutinins are thought of as an evidence of resistance to infection, formed in response to infection, rather than as evidence of infection itself, confusion will be lessened.

The presence of agglutinins indicates absence of resistance.

The agglutination test is one of the most reliable diagnostic procedures in use today, especially in the cases of acute brucellosis where the agglutinins may appear in the blood as early as the fifth day of illness, with a high serum titer. Generally speaking, the specific agglutinins do not appear in very high titer until the second week of the disease, and in some cases do not appear until extremely late in the illness. Simpson says that in 6 per cent of cases the agglutinins may be entirely absent even in the face of a positive blood culture.

Hartsock in his series found that the agglutinins appeared in the blood in from one to three weeks and in the acute febrile stage may reach a titer of 1:10,000.

In the interpretation of an agglutination test anything over 1:80 should be diagnostic and any agglutination of 1:10-1:40 should stimulate further serologic work on the patient. Frequent tests should be made and in the face of an ever increasing titer, Simpson says a diagnosis of active brucellosis can be made, and conversely if titers are gradually decreasing Huddleson says the patient is recovering.

Chronic brucellosis is difficult to diagnose by use of the agglutination reaction due to repeated negative and low titer return. In a group of 28 proved cases Simpson found 4 per cent giving negative agglutination reaction.

Meyer and his associates tested 3,226 persons, such as veterinarians, meat packers, and dairy workers who are in constant and direct contact with the disease but have no active manifestations of brucellosis themselves, and found that 14.7 per cent had a positive agglutination reaction of 1:40 or above and in one case a titer of 1:5000.

Nicolle and Comte (1910) and Zinsser and Bayne-Jones (1934) observed the agglutination of *Brucella* organisms by the serum of a typhus fever patient. Also Simpson has shown the cross agglutination power of *Past. tularensis* and *Brucella*. At times this cross agglutination gives much confusion to the picture but in time as the

disease progresses the *Brucella* agglutination titer will usually rise and the other antigens of tularemia and typhus fever will remain the same or decrease.

Although the agglutination test is most helpful in diagnosis it is not perfect and is subject to the following limitations:

1. The agglutination titer may remain at a high level years after recovery from the disease.

2. Some individuals develop agglutinins after exposure to the illness with no definite signs of sickness.

3. The agglutinin titer fluctuates widely on repeated testing.

4. The possible agglutination reactions with *Past. tularensis* and *B. proteus* X 19.

5. All blood to be tested must be drawn before any cutaneous tests are performed, for Evans found that in a number of cases, brucellergen caused an agglutinin response not compatible with the patients tested.

There are two methods for running the agglutination test and they are: (1) the test tube method and (2) the rapid method.

The intradermal skin test: This skin test is used to determine the cutaneous hypersensitivity to *Brucella* antigens. A positive reaction is accepted as a past or present infection, although there are many cases reported where this test is negative while the blood culture is positive.

The test is performed by injecting 0.1 c.c. of brucellergen or 0.1 c.c. of 1 c.c. of commercial standard antigen diluted with 9 c.c. of normal saline into the skin of the forearm, and the arm examined 48 hours later. A positive test is measured by the development of a circumscribed erythematous, indurated area 0.5 to 3 inches (1.9—7.5 cms.) in diameter, appearing at its maximal intensity 48 hours after inoculation. In frankly positive tests the induration may persist for several days and in hypersensitive individuals a mild or severe systemic reaction may appear, in such cases a regional lymphangitis and axillary node enlargement may follow. Also an exacerbation of symptoms and an area of focal necrosis sometimes occur.

A pseudopositive test in which there is great redness at the end of 24 hours but disappearing in 48 hours may occur. A false positive test occurs in a person hypersensitive to a foreign protein and the reaction is no different from a true positive reading.

False negative tests do occur also, for in one patient with marked respiratory symptoms and a positive agglutination test of 1:10,000 the skin test was reported as negative.

In a series of 155 cases with positive skin tests, Keller, Pharris and Gaub found that 12 or 7.8 per cent showed positive agglutination tests, suggesting the greater efficiency of the cutaneous test. Of these 155 cases checked with the opsonocytophagic test it was found that 51.6 per cent were affected without immunity; 8.4 per cent were positively immune and 40.0 per cent were actively immune.

The intradermal skin test has a great value in the help of diagnosing the presence of brucellosis, but as with the agglutination reaction it has certain limitations. These are:

1. A positive test does not indicate the presence of active brucellosis for hypersensitiveness once acquired after symptomatic or subclinical infection may persist for years.

2. A positive test does not mean that the symptoms from which the patient is suffering now is due to brucellosis, for positive tests have been found in patients whose diseases were later diagnosed as tuberculosis, Hodgkin's disease, typhoid fever, malaria, and subacute streptococcal endocarditis.

3. A positive test unless accompanied by regional lymphangitis and adenitis or an exacerbation of the patient's symptoms, does not denote infection but suggests the possibility of active infection or active immunity. An opsonocytophagic test has to be made to determine the degree of the patient's immunity.

4. The skin test may be positive in that group of people such as veterinarians, meat packers, and dairy workers who are in con-

stant contact with Bang's bacillus but are not infected.

5. Evans says that the skin test is not as accurate as the agglutination test for the allergy appears later in the disease and lasts for a longer period of time, after recovery of the patient. Whereas, Gould and Huddleson say that in the face of a negative test that brucellosis can be ruled out.

The antigens used in the intracutaneous skin test are: (1) a heat killed suspension of brucella in physiologic saline solution (a vaccine); (2) a suspensoid of nucleoproteins isolated from brucella by chemical separation known as brucellergen; (3) commercial vaccine—diluted 1 c.c. with 9 c.c. of normal saline.

The opsonocytophagic test: The opsonocytophagic reaction should be used in conjunction with either the agglutinins or intradermal tests to determine the immunity status of an individual giving positive tests by either or both methods.

The technic for making the opsonocytophagic test consists in collecting 5 c.c. of the patient's blood in a vial containing 0.2 c.c. of 20 per cent sodium citrate. Then take 0.1 c.c. of a saline suspension of living brucella which have been grown for 48 hours on liver infusion broth agar. The mixture is incubated for 30 minutes at 37° C. A smear is then made from the incubated mixture and stained with 0.5 c.c. of Hasting's stain for 30 seconds, after which 1 c.c. of distilled water pH 6.8 is added for one minute. The slide is then gently washed with distilled water and dried quickly in front of an electric fan, and examined microscopically.

A total of 25 leukocytes is counted, and the number of phagocytized *Brucella* organisms per cell is tabulated as follows:

1. No organisms present—no immunity.
2. 1-20 organisms present—slight immunity.
3. 20-40 organisms present—moderate immunity.
4. 40-above organisms present—marked immunity.

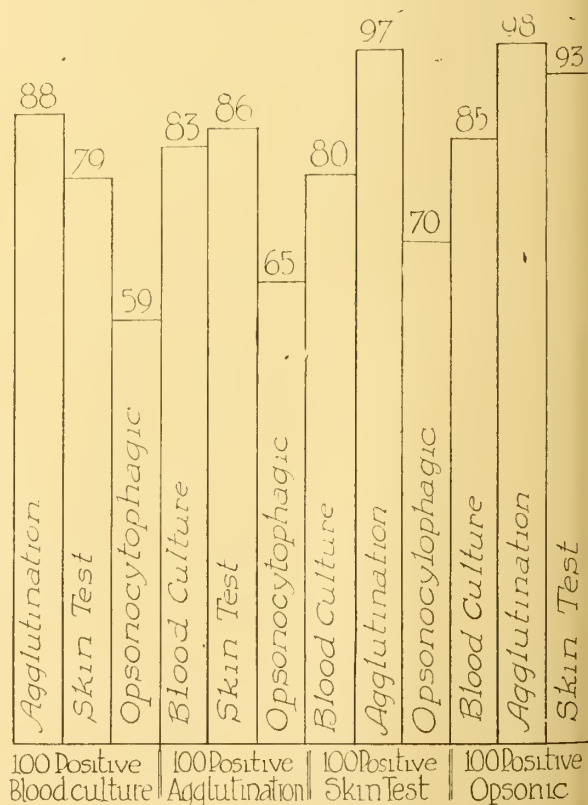
The percentages of cells showing phagocytosis is tabulated according to their re-

spective groups and if 40 per cent or less cells show phagocytosis the person is said to be infected, 40-50 per cent show marked phagocytic action then the person is questionably infected or immune. If 60 per cent show marked phagocytosis the person is said to be immune. The opsonocytophagic test is a method of measuring the body's resistance to disease.

The limitations to the opsonocytophagic test are:

1. It must be performed with blood not over six hours old.
2. It should be performed by those people well trained in the work for the test itself seems to give too high a percentage of immunity.
3. The test is not as reliable as other tests and should be used in conjunction with the agglutination or intradermal skin test plus careful consideration of the patient's clinical course and symptomatology.

The following charts, prepared by Castaneda, Favor and Vilez, show the comparative value of the diagnostic tests or procedures for brucellosis.



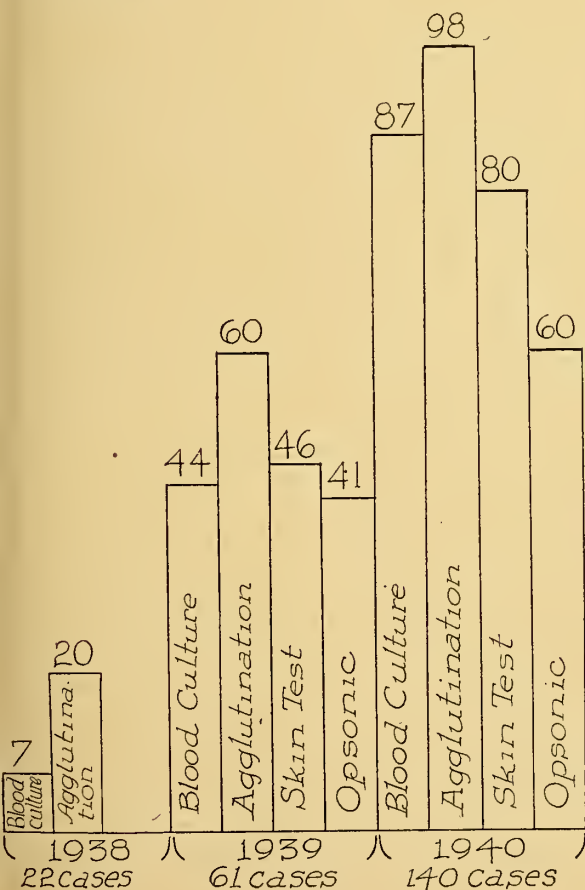
By comparison of the charts it can be seen that the Huddleson agglutination test is the most accurate diagnostic procedure, followed closely by the skin test, blood culture and opsonocytophagic tests.

For one to make a definite diagnosis of brucellosis he should use at least two of the described procedures, preferably the agglutination and skin tests, (and still miss 10 per cent), and wherever possible the blood culture.

There are additional measures sometimes used as diagnostic aids in brucellosis, these are:

1. Complement-fixation test: Due to the fact that this test requires so much more time and well trained technicians, and also that it does not become positive before the agglutination test (which is much simpler to do) this test has fallen into disuse.

2. The injection of typhoid or paratyphoid vaccine sometimes will cause a higher titer of agglutinins and a positive skin test to appear.



3. Sulfanilamide has been given to some patients and a high increase in the opsonocytophagic index has resulted. This work was done by Welch, Wentworth and Mickle, who are of the opinion that it has great diagnostic value.

DIFFERENTIAL DIAGNOSIS

If brucellosis is given careful consideration in the differential diagnosis of all febrile diseases especially those such as typhoid fever, typhus fever, relapsing fever, tuberculosis, malaria, influenza, chronic bronchitis, pyelitis, rheumatic fever, or bacterial endocarditis, in which the diagnostic criteria is not convincing then the disease will be found much more frequently than thought to be at the present time.

I would like to give a few of the more common differentialities and a statement about each.

Typhoid and Paratyphoid Fever: The acute onset, toxicity of patient, diarrhea, tympanitis, sustained fever and absence of sweats, with a positive Widal reaction tend to rule out brucellosis.

Influenza: This misdiagnosis is due to the fact that physicians have a tendency to call all undetermined fevers "flu".

Tuberculosis: A careful history, including family history plus the x-ray findings usually diagnose tuberculosis.

Malaria: The regularly repeated chills and fever which sometime occur in brucellosis may suggest malaria, but carefully prepared and examined blood smears will either clinch or rule out the diagnosis of malaria.

Pyogenic Septicemia: The neutrophilic leukocytosis that usually occurs in this type of infection tends to rule out brucellosis. Blood culture must be made.

Subacute Bacterial Endocarditis: The weakness, remitting fever, loss of weight and anemia are characteristics common to both. However, *Brucella* organisms may cause an endocarditis, and recourse must be had to blood counts, blood cultures, agglutination tests, and other laboratory procedures.

Acute Rheumatic Fever: The onset and course of acute rheumatic fevers are in

striking contrast to the insidious onset and the subacute course of brucellosis.

Tularemia: The clinical characteristics of the ulceroglandular, glandular, and oculoglandular types of tularemia are so striking that diagnosis of the infections occurs with ease. But the typhoid type brings on confusion due to the cross agglutination phenomena present. However, the Tularensis agglutination titer will be of much higher value than the *Brucella*, and the intradermal test will be negative for brucellosis.

Appendicitis-Cholecystitis: Fever, abdominal pain and localized tenderness are the misleading features. In many cases operation has been readily advised. Therefore, a careful complete history with an adequate study of the blood count is indicated.

Infections of the Urogenital Tract: Frequent and painful micturition and pus in the urine as not uncommon features of brucellosis. These occur late in the infective period or fastigium and a careful history will usually lead to a generalized infection with manifestations.

PROGNOSIS

The prognosis of brucellosis is good, the death rate being around 3 per cent. *Brucella abortus* offers the best prognosis while on the other hand *Brucella suis* gives the worst prognosis.

SUMMARY

A short review of the history of brucellosis is given and the epidemiology of the disease more thoroughly discussed. The attempt has been made to bring to the front such methods of transmission of the disease as insect carriers and water-borne routes. These factors are definitely of prime importance to cattle farmers and to sanitary health engineers associated with the Army.

The procedures for establishing the diagnosis of brucellosis have changed very little in the past few years and the diagnostician must depend upon: (1) blood cultures, (2)

agglutination tests, (3) cutaneous test, and (4) opsonocytophagic index test definitely to settle the questionable diagnosis. The limitations of all these tests have been explained not one is even nearly 100 per cent perfect. At least two tests should be positive to diagnose a case and still 10 per cent of the cases will be missed.

Until better controlled, brucellosis should be considered a scourge of mankind that is becoming more and more prevalent. It should be and will be regarded a major health problem considering its effect on chronic morbidity.

BIBLIOGRAPHY

- Beckman, Harry: Treatment in General Practice, Philadelphia, W. B. Saunders Co., 1942.
- Carr, James G.: The symptoms, diagnosis and treatment of undulant fever, Illinois M. J., 73:521, 1938.
- Castaneda, M. R., Favor, Raul, and Villez, Rafael: Studies on brucellosis in Mexico: comparative study of various diagnostic tests and classifications of the isolated bacteria, J. Infect. Dis., 70:97, 1942.
- Calder, Royal M.: Brucellae, Pasturella tularensis and proteus agglutinin in chronic brucellosis, J. Bact., 41: 593, 1941.
- Cecil, R. L.: Textbook of Medicine, Philadelphia, W. B. Saunders Inc.
- Ervin, Carl E., and Hunt, Henry F.: The diagnosis and treatment of undulant fever, J.A.M.A., 100:1967, 1938.
- Feder, J. M.: Carbon dioxide method for diagnosing gonorrhea and undulant fever, South. Med. & Surg., J., 103:426-28, 1941.
- Harris, Harold J.: Brucellosis (Undulant Fever), Clinical and Subclinical, New York, Paul B. Hoeber, 1941.
- Hartsock, Charles L.: The diagnosis and treatment of brucellosis, Cleveland Clin. Quart., 9:22, 1942.
- Huddleson, I. Forest: The diagnosis and control of brucellosis, J. Oklahoma St. M. A., 25:106, 1942.
- Huddleson, I. Forest: Brucellosis in Man and Animals, New York, The Commonwealth Fund, 1939.
- Keller, Alvin E., Pharris, Crit, and Gaub, W. H.: Undulant fever—comparative of certain diagnostic tests, South. M. J., 31:1, 1938.
- Manchester, Robert C.: The clinical manifestations and diagnosis of chronic brucellosis, Ann. Int. Med., 16:950, 1942.
- McIntire, F. S.: Diagnosis of brucellosis, Texas St. J. M., 37:355, 1941.
- Meakins, J. C.: Practice of Medicine, St. Louis, C. V. Mosby Co., 1938.
- Musser, J. H.: Textbook of Medicine, Philadelphia, Lea and Febiger, 1938.
- Newman, Harold S.: Some public health aspects of undulant fever, Ann. Int. Med., 11:1973, 1938.
- Simpson, Walter M.: Brucellosis, Bull. New York Acad. M., 17:592, 1941.
- Terry, L. L.: Brucellosis: a public health problem, Texas St. J. M., 37:359, 1941.
- Wise, Bowman, and Craig, H. W.: The *Brucella* complement-fixation reaction, J. Infect. Dis., 70:147, 1942.

NEW ORLEANS

Medical and Surgical Journal*Established 1844*

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

C. C. deGravelles, M. D., Ex officio
 For one year: Lucien A. LeDoux, M. D., Chairman
 H. W. Kostmayer, M. D., Secretary
 For two years: James K. Howles, M. D.
 For three years: G. C. Anderson, M. D.,
 Vice-Chairman
 Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D. *Editor-in-Chief*
 Willard R. Wirth, M. D. *Editor*
 Daniel J. Murphy, M. D. *Associate Editor*

COLLABORATORS—COUNCILORS

H. E. Bernadas, M. D.
 J. T. O'Ferrall
 Guy R. Jones, M. D.
 T. B. Tooke, Sr., M. D.
 George Wright, M. D.
 Rhett McMahon, M. D.
 C. A. Martin, M. D.
 W. F. Couvillion, M. D.
 Paul T. Talbot, M. D. *General Manager*
 1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

A MEETING TO DISCUSS BILL S. 1161

On Wednesday, September 1, there was held in the University Room of the Roosevelt Hotel a very large well attended meeting of certain groups interested in bill S. 1161, to discuss the important features of this revolutionary proposed Act. The groups consisted of representative physicians, dentists, wholesale and retail druggists, and nurses. It was called by Mr. C. A. Iorns, Chairman of the Domestic Commerce Committee of the New Orleans Association of Commerce, who acted as pre-

siding officer. Speeches were made by representatives of the various groups including Dr. C. C. deGravelles, President of the Louisiana State Medical Society, and Dr. Val H. Fuchs, President-Elect of the organization. The speakers to a man denounced the bill. Senator Allen J. Ellender and Representative Paul Maloney were at the speakers' table and spoke at the conclusion of the other addresses. Senator Ellender brought out a very excellent point which it would be advisable for doctors to take to heart, namely, that the physicians in the state have not shown sufficient interest in this bill and have not expressed themselves with force and vigor to their several governmental legislators.

It may be that the evils of the bill are so outstanding that the medical profession feels that the bill will never pass Congress. However, while this particular bill might not be passed, one somewhat less radical and somewhat less tinged with demagoguery might be presented to Congress as a substitute. Doctors of the state should definitely indicate a disapproval of the present bill, and by so doing would indirectly let their representatives in Congress know that they were opposed to any form of Federal medicine or the regimentation of medical services in any form.

THE SUPPLY OF DRUGS

A recent release by the War Production Board should be of interest to the medical profession. In this account of the drug situation information is given about those medicaments which are scarce and data are presented concerning efforts to accumulate a stock sufficient for the needs of the country.

In the early part of the war there was a great shortage of many drugs due to the demands of lend-lease and of the Army. Most of the critical drugs at that time are now being supplied through the seeking out of new sources of material at home and abroad, and the construction of new facilities for their production. There still remains a certain number of drugs which are lacking or the supply is very small. Quinine,

of course, is the outstanding example. Quinine is practically unobtainable except the small portion that has come from Bolivia so that the use of quinine is restricted to its anti-malarial use and the alkaloid, quinidine, to certain heart conditions. The stock of quinidine is virtually exhausted, incidentally. To replace quinine, totaquine bark is being imported from Central America in relatively large quantities. Unfortunately the bark varies considerably in its alkaloid content and it is an expensive process to obtain the alkaloids. Its cost is much more than quinine but every doctor is earnestly urged not by the War Production Board particularly but by the Army, Navy and other agencies in Washington to use totaquine instead of quinine in the treatment of malaria. There still is a fair amount of quinine in the South where no efforts were made to obtain the stocks that lie on druggists' shelves but elsewhere throughout the country the druggists have been called upon and have responded loyally to the pooling of their quinine. Totaquine is a safe, efficient anti-malarial and its effectiveness is practically equal to quinine. Quinaquine, the synthetic agent popularly known as atabrine, is now being produced in large amounts, some six of the big drug firms have started to manufacture it. This also is recommended to be used by physicians in the treatment of patients in this country with malaria so that quinine may be conserved for the treatment of estivo-autumnal malaria in the troops in the tropics.

Agar is extremely short as this sea weed came almost entirely from Japan. It can now be used only in the preparation of bacteriologic media, and there is not enough of it even for this one purpose. It is recommended that doctors use psyllium seed as a substitute to increase intestinal bulk. Tannic acid is restricted in its use to burn preparations only. Incidentally, recent investigations have shown that tannic acid method of treatment of burns is not as satisfactory as are other methods.

Bismuth is likewise restricted. Doctors are asked to use a substitute for bismuth subnitrate and bismuth subcarbonate or

other bismuth containing salts. Magnesium trisilicate is suggested as an excellent substitute. Bismuth for antisyphilitic therapy is completely unrestricted.

Phenol is a critical war material. The amount allotted to the manufacturers of salicylates has been considerably reduced. Physicians are again asked to conserve as much as possible the use of aspirin, phenyl salicylate, sodium salicylate and methyl salicylate. Cresol is used by the Army in quantities so great that the "compound solution of cresol" is no longer available.

Penicillin is now being manufactured but the amount that is being produced is so small that it is impossible to put it on the market except for limited use in clinical investigations. The entire supply is used by the armed forces. Alcohol, sugar and glycerine are critical commodities. Alcohol is rigidly curtailed in order to produce smokeless powder and synthetic rubber. Glycerine is used to produce munitions. The sugar situation is materially improved but again the doctors are asked to use tablet or capsule forms of administering medications rather than fluid preparations of elixirs, syrups and solutions.

There has been a tremendous increase in the demand for the sulfonamides and vitamins and at one time the situation was most dangerous. However, all of these products are now being produced in quantities sufficient for civilian needs. The same statement applies to caffeine and theobromine preparations. Arsenic preparations were available in barely sufficient quantities to meet the demands but production has been so much expanded that there is an ample amount available. The doctor is requested to help conserve mercury which is required in large quantities for explosives. Where ever possible use other antiseptics than mercurial.

Pelladonna is imported from central Europe. The supply was totally inadequate a year and a half ago but now that belladonna plants are being raised through projects sponsored by the Department of Agriculture, the War Production Board and Defense Supplies Corporation, there has re-

sulted the production of an adequate supply of the belladonna plant.

Lastly, there exists a very real problem in the shortage of container and package materials. There is not a sufficient supply of metal, plastics, glass and paperboard container to meet the demands. Here the physician can assist in minimizing this need by prescribing the largest practical size container of the drug, by reclaiming glass, glassware and bottles as well as metal containers.

The outlook for the future is excellent except in a very few instances. Drugs considered essential to military and civilian practice of medicine are now being made available in greatly increased quantities. However, in those medicaments in which there is shortage the physician is earnestly urged to follow out some of the suggestions that have been indicated above.

HIATUS HERNIA

Diaphragmatic hernia has been extensively discussed in the literature in the past thirty years. In spite of this fact the clinician often fails to appreciate the importance of the disease in the differential diagnosis of thoracic and abdominal disorders. It is for this reason that Ohler and Ritvo* have studied and reported upon a series of cases, 136, that they have observed.

The cause of diaphragmatic hernia is not known. Most students of the disorder believe that it is due to some congenital defect, in part basing their contention on the fact that duodenal diverticulum, a congenital defect, is so frequently associated with hiatus hernia. Other factors may exaggerate a congenital defect which has been symptomless, such as loss of weight, increased intra-abdominal tension and advancing age.

The symptoms may be in the chest. Substernal pain is often present, which pain may be severe, be referred to the shoulder and down the left arm and in every way mimic angina pectoris. Aside from the substernal pain, there may be other symptoms

which would suggest a cardiac condition, such as dyspnea and palpitation occurring often when the patient is in the dorsal position and coming on during or immediately after meals. In this series of cases studied by Ohler and Ritvo in 104 carefully analyzed cases the symptoms were suggestive of coronary disease in approximately 12 per cent of the patients. The symptoms may resemble closely those of gallbladder disease. Here the percentage is slightly under 23, while more than one-half of the patients have gastrointestinal symptoms which are quite marked. Gastrointestinal symptoms include epigastric pain, nausea, heart burn, belching, dysphagia and anorexia. Patients frequently, over long periods of time, have these gastric disturbances which instead of arising below the diaphragm are actually above this muscular sheet. Most typical symptoms are epigastric discomfort and a sensation of fulness appearing rather promptly after eating or even during meals.

It is pointed out that the expressions of hiatus hernia are most variable and inconstant, so clinical diagnosis is often very difficult and the roentgenologist must be called upon to make the diagnosis. The ordinary gastrointestinal series, because of the smallness of the lesion, may fail to disclose the cause of the trouble. If it is suspected then special studies must be made, such as fluoroscopic examination of the patient in different positions, after deep breathing or with pressure on the abdomen.

In the management of the patients who have hiatus hernia, if they are discovered by chance and are symptomless, no treatment is required. On the whole, medical treatment is probably the best for patients with small lesions. A bland diet with 4-6 feedings a day is indicated. Food should not be taken before bedtime. For the night pain, sleeping at an angle of 45 degrees is recommended and needless to state alkalies and antispasmodic drugs are often beneficial. If these medical measures fail to relieve the patients, then the more serious surgical procedures must be considered.

In older individuals in whom the diagnosis of coronary arterial disease with angina

*Ohler, W. Richard, and Ritvo, Max; Diaphragmatic (hiatus) hernia, New England J. M., 229:191, 1943.

pectoris seems to be most logical, a gastro-intestinal study is indicated, particularly if these persons have pain immediately after eating and if it is relieved by the erect posture or walking about for a short time.

There has been many a man whose physical activities have been decidedly limited because of spurious angina when the underlying pathologic condition was that of hiatus hernia.

ORGANIZATION SECTION

The Executive Committee dedicates this page to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

STATE SOCIETY DUES

At the last meeting of the House of Delegates, held in Baton Rouge, the dues to the State Society were raised to \$25.00 per year. Previously the dues had been \$8.50 per year. This represents quite an increase but one that the House of Delegates felt was justified under the existing circumstances.

The dues you pay to the State Society must cover a number of things. It covers your subscription to the New Orleans Medical and Surgical Journal, one dollar per member is allocated to the Indigent Physicians Fund, fifty cents to the Entertainment Fund, and fifty cents to the Medical Defense Fund. Formerly this left about five dollars per member to cover the general expenses of the Society. In previous years this has afforded a balanced budget, but has not permitted the general fund to maintain a balance to meet any emergency that might arise.

At this same meeting of the House of Delegates, the dues of members in Military Service were deleted, so that the paid membership of the Society will be materially reduced. For 1943 after deducting those in the Military Service there were 1,261 regular members whose dues amounted to \$10,718.50. This amount plus interest on U. S. A. Treasury Bonds and reimbursement from New Orleans Medical and Surgical Journal of \$1,320.00 for salaries of stenographers, makes the total estimated income for 1943, \$12,137.50. With an estimated budget for 1943 of \$13,343.81 for ordinary expenses, we will be left with a

deficit of approximately \$1,206.31. This deficit is estimated from ordinary expenses and, of course, will be larger should any emergency arise. At present the Society must borrow money to meet that deficit.

Obviously such a set up necessitated raising the dues since that is our only source of income. A jump to \$25.00 per year may be considered too much, but certainly doctors can afford that amount at this time and among other things permit the general fund of the Society to build up a reserve.

Many members have asked what is to be done with the \$25.00 annual dues. If the activities and benefits of the Society are to stay on an \$8.50 level, they will all resent paying the increased dues but if with the additional income the work of the Society is increased so that each member can see actual concrete benefits derived therefrom, there will be no objection to paying the increased dues. After all the strength of our Medical Society depends more upon the number of members than upon any bank balance. A Society which enrolls practically every doctor in the state can exert more influence than a Society enrolling half the doctors, regardless of the amount of dues paid. The extent of the enrollment depends in a large measure upon a satisfied membership.

There are a number of things that could be done with additional revenues. A reasonable surplus should be built up for the general fund, so that we would be prepared for any emergency that might arise. There are a number of activities of the Society carried on by its members and requiring an

outlay of their personal funds. This applies particularly to the members of your executive committee and councilors who must make three or more trips to New Orleans each year at their own expense. These doctors should not be expected to sacrifice their time and their money to attend to your business but should have their necessary expenses paid.

We have a full time Secretary and Treasurer who should be supplied with sufficient funds to cover the state at least twice each year. It should be expected that he will repeatedly visit district and parish societies and even doctors personally, acquainting them with the affairs of the Society and learning from them what they want done. A personal touch of this type would help wonderfully in building up the enthusiasm of our members. Dr. Doe practicing in some small community needs such a contact far more than the man in a large city but heretofore he has not had that contact. True he may read the State Journal and may have some contacts at state meetings but otherwise he is practically a step-child.

For sometime we have tried to work out a plan whereby a library service could be made available to the doctors of the state. Such a service will call for the expenditure of a certain amount of money which should be now available. If and when a library service could be made available to every doctor in the state and particularly to the doctors in smaller communities it will be of great benefit.

The State Society also has certain special funds as the Indigent Physicians Fund and the Medical Defense Fund that need increased reserves so as to make them more effective. With the increase in dues a larger amount could be allocated to these funds and thus make them of greater value.

These are only a few of the things that could be accomplished by the State Society with additional revenues. Certainly it is not asking too much of our members to pay about fifty cents a week into their state organization with the idea of making it a more effective organization.

HOW BEST TO OPPOSE SOCIALIZATION OF THE PRACTICE OF MEDICINE

For a number of years the medical profession has had constantly before it the threat of socialized medicine or the political control of the practice of medicine. Since the report of the committee on the cost of medical care was published, there has been a persistent demand from certain groups for a change in the form of medical practice supposedly to make adequate medical service available to the low income group. At the present time these efforts have culminated in the introduction of the Wagner-Murray-Dingell Bill—S. 1161—a pernicious piece of legislation placing the entire practice of medicine under political control.

The medical profession has consistently opposed these various attempts to socialize or politicalize the practice of medicine. We have done so because we realize that such plans can only result in an inferior quality of medical service, rendered at greater ultimate cost to the taxpayer. No one can seriously question the correctness of our stand on those grounds, but there has always been a weak link in our opposition, namely that we have offered no plan to correct the known evident defects in the present distribution of medical care. Opposition to any measure such as the Wagner-Murray Dingell Bill, must be constructive and not simply negative if it is to meet with ultimate success.

Certainly one cannot say that all is well with the distribution of medical care in the State of Louisiana. It is true that we have a system of Charity Hospitals which are rendering a great service and fulfill a certain definite need, but there is room for certain improvements in the quality of that service. There still remains though a large group of people not quite in the charity group yet not able to carry the burden of a serious illness. These people do not want charity service but when confronted with a medical and hospital bill of \$200.00 or \$300.00 that cannot be paid they must either accept charity or assume a debt that will require months to liquidate provided

they fortunately escape another doctor and hospital bill in the meantime. Many of these people are eager for some change in medical practice which will make available to them medical care that they can pay for and not so-called charity treatment.

There is another large group of people, truly indigent who usually go without ordinary medical care for simple illness or preventive measures. If they live in a large city where outpatient clinics are active they can secure treatment for an illness not requiring hospitalization but if they are in smaller towns or in the country they either go without or have gratuitous treatment from a local physician. Certainly these people feel the necessity for some change which will make adequate medical care available to them and therefore they will accept and support measures in the nature of the Wagner-Murray-Dingell Bill and who could blame them.

These two groups make up quite a large percentage of the population, almost a controlling voting percentage and it is therefore to them that the politician appeals. Ultimately they will get some change in

medical practice, a change given to them by the politicians or by a thoughtful wide awake medical profession. Thus far the politicians have been offering the appealing plans. True various plans have been tried in certain localities by medical societies, county or state but these have not been very general.

Just recently when talking to a group of laymen seeking their cooperation in opposing the Wagner-Murray-Dingell Bill, I was confronted with this reply, "Yes Doctor, we are opposed to this bill and any other scheme of socialization, but what plans have you whereby the low income group can secure adequately medical care." That is the urgent question before the medical profession. We must see that everyone is able to secure adequate medical care under some plan of which we approve. If this is not done by us, the Wagner-Murray-Dingell Bill or a similar bill will be passed, whether we like it or not. Our position will be much stronger and perhaps lead to ultimate success if, in addition to opposing such measures as the Wagner-Murray-Dingell Bill, we offer some constructive plan for the solution of the question.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

October 4	Board of Directors, Orleans Parish Medical Society, 8 p. m.	Medical Society, Orleans Club, 3 p. m.
October 5	Eye, Ear, Nose and Throat staff, 8 p. m.	October 14 New Orleans Hospital Council.
October 6	Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.	October 15 I. C. R. R. Hospital Staff, 12:30 p. m.
	Mercy Hospital Staff, 8 p. m.	October 18 Hotel Dieu Staff, 8 p. m.
October 7	Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.	Clinico-pathologic Conference, Baptist Hospital, 8 p. m.
	Executive Committee, Baptist Hospital, 8 p. m.	October 19 Charity Hospital Medical Staff, 8 staff.
October 11	Fourth Quarterly and Executive Meeting, Orleans Parish Medical Society, 8 p. m.	October 20 Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
October 13	Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.	Charity Hospital Surgical Staff, 8 p. m.
	Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.	Clinico-pathologic Conference, Hotel Dieu, 8:15 p. m.
	Touro Infirmary Staff, 8 p. m.	October 21 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
	Women's Auxiliary, Orleans Parish	October 26 Baptist Hospital Staff, 8 p. m.
		October 27 Clinico-pathologic Conference, Charity Hospital Morgue Ampitheater, 1:30 p. m.

Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.

Catholic Physicians' Guild, 8 p. m.

French Hospital Staff, 8 p. m.

October 28 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

DePaul Sanitarium Staff, 8 p. m.

October 29 L. S. U. Faculty Club, 8 p. m.

New Orleans Hospital Dispensary for Women and Children Staff, 8 p. m.

During the month of September the Society called two special meetings. On September 1st the doctors, dentists, druggists, pharmaceutical representatives and hospital representatives met with the Senators and Representatives of Louisiana and aired the proposed Wagner-Murray Bill, S-1161. On September 20th the general membership of the Society met and outlined a plan of procedure for defeating Senate Bill 1161.

On numerous occasions physicians have trouble with their cars at night, and it is rather difficult to locate a service station that is open. The Society has made inquiries and find that the following stations are open all night and hold themselves in readiness to serve the medical profession: Barcelona's Service Station, 2200 St. Charles Avenue, Magnolia 1471; Barcellona's Service Station, 2200 Dryades Street, Canal 2794; Jennsen's Day and Night Auto Wrecker Service, 3139 St. Claude Avenue, Franklin 3181; and New Orleans Motor Co. Inc., 1801 Canal Street, Galvez 4141.

The Society has also been informed by Mr. Toye of the Yellow Cab Company that he has instructed the dispatchers to furnish immediately the physicians with cabs when they call in. Mr. Morzloff is the day dispatcher and Mr. Reizer is the night dispatcher. It is hoped that the physicians will not abuse this service.

NEWS ITEMS

Dr. W. R. Buffington was recently elected counselor of the Southern Medical Association.

Dr. Joseph A. Danna was recently elected president of the Associated Catholic Charities. Dr. Leo J. Schoeny was re-elected treasurer of this organization.

Major W. Robyn Hardy was in New Orleans recently on a visit.

Stanley Cohen was recently promoted to the rank of Major. Major Cohen is on foreign service and is chief of medical services of the hospital staff.

Lt. Col. Charles B. Odom has been cited for the Legion of Merit medal as a result of his work with the wounded in the Sicilian campaign.

Capt. Paul L. Marks was recently assigned to foreign duty.

Sherman S. Pinto entered military service during the month of August. He is a Captain in the U. S. Army and is stationed at Brownwood, Texas.

The following letter was sent to the entire membership of the Orleans Parish Medical Society:

September 13, 1943.

Dear Doctor:

No doubt you are familiar with the proposed amendment to the Social Security Act, Senate Bill 1161, which was introduced in the Senate on June 3, 1943 by Senator Wagner for himself and Senator Murray. At the same time Representative Dingell introduced in the House of Representatives an identical measure, H. R. 2861.

Senate bill 1161 is now in the hands of the Committee on Finance of the Senate and is expected to come up for discussion this fall. It is by far the most dangerous proposal, from the standpoint of free economy, that has yet been made.

This proposed legislation provides for the General Welfare, with the Federal government doing the providing. This most recent of the "comfort" measures is designed to remove virtually all the hazards of living. Among other things, it makes provisions for free general medical, special medical, laboratory and hospitalization benefits for more than one hundred and ten million people in the United States. It would place in the hands of one man—the Surgeon General of the Public Health Service—the power and authority to hire doctors and establish rates of pay for doctors; to establish fee schedules for services; to establish qualifications for specialists; to determine the number of individuals for whom any physician may provide service; to determine arbitrarily what hospitals or clinics may provide service for patients. In short, the bill, if enacted into law, would destroy the entire system of American medical care.

The spectre of socialization "a la the German pattern" continues to haunt the land. On the one hand we see a powerful labor union urging public ownership of basic industries, while on the other, public servants are recommending public ownership of the medical profession.

To finance the scheme, Social Security taxes on both employers and employees would be steeply increased. They would go to 6 per cent of wages up to \$3,000 a year from each of these parties, as against the present 1 per cent from employees and 4 per cent from employers. In other words a total of 12 per cent as against 5 per cent at the present time. However, federal, state and municipal employees would pay a tax of only 3½ per cent. Added to the already 20 per cent withholding tax this would amount to a sizeable slice of one's income. The Surgeon General would, therefore, have at his disposal to be used as his judgment dictates, approximately \$3,000,000 collected annually from

the taxpayer. This is nearly as much as the total cost of maintaining the Federal government each year on the average from 1924-33. We are indeed a sick nation if we are willing to swallow such a pill.

It does not seem possible that free American citizens want a one-man medical system any more than they want a one-man government.

There are two steps to follow at the present time—1. Write your Senators and Congressmen for copies of these bills. Do not discuss the bills, merely ask for copies. 2. Use the accompanying booklet. Have 1, 3, 5, or more of your friends write their Senators and Congressmen for copies of these bills.

During World War I the prohibition law was enforced while a large proportion of our boys were fighting on foreign soil, and unable to express themselves. Now while our boys are again on foreign soil fighting the foes of democracy, there are certain groups who are busily conniving to destroy our democracy. If these groups succeed in their efforts to socialize us, these boys will have fought in vain.

It is a duty which a physician owes to himself, his profession and his colleagues, who are in military service and unable to defend their profession, to take a firm stand to prevent this legislation from being enacted into law, and to abolish any and all future foreign policies such as this from encroaching upon our DEMOCRATIC way of living.

Yours sincerely,

H. B. Alsobrook, M. D.,

HBA:a

President.

P. S. A special meeting of the membership has been called for Monday, September 20th, at 8 p. m., in the Hutchinson Memorial Auditorium, 1430 Tulane Avenue, to outline a plan of procedure to defeat this bill.

Senators:

Allen J. Ellender

John H. Overton

Congressmen:

F. Edward Hebert

Paul H. Maloney

THE SPECIAL MEETING

This special called meeting of the Orleans Parish Medical Society was held Monday, September 20. After several hours of discussion, the following resolution was unanimously adopted. It is earnestly hoped that every parish and district society will likewise hold meetings to condemn this most pernicious bill.

The Resolution

WHEREAS, The proposals of Senate Bill 1161, introduced in the Senate on June 3, 1943 by Senator Robert F. Wagner for himself and Senator James Murray, are of such magnitude and of such

sinister menace that, practically, they are incomprehensible to a right thinking American citizen; and

WHEREAS, The processes proposed and the mechanisms indicated are designed to act as the catalyst in transforming a rapidly expanding Federal bureaucracy into an all powerful totalitarian Federal control; and

WHEREAS, Senate Bill 1161 provides, in addition to numerous other measures, designed to remove virtually all the hazards of living, medical and hospital benefits to approximately 110,000,000 persons in the United States, and place in the hands of one man, the Surgeon General of the Public Health Service, the power and authority to hire doctors and establish rates of pay for doctors; establish fee schedules for services; establish qualifications for specialists; determine the number of individuals for whom any physician may provide service; and determine arbitrarily what hospitals or clinics may provide service for patients; and

WHEREAS, An individual will be forced to accept the physician assigned to him, subject to the Surgeon General's selection or discretion, whether the physician is to the patient's liking or not, resulting in a lower grade of medical service and lowering our standards of medical practice—the highest in the world; and

WHEREAS, There are certain groups in Washington who are busily conniving for socialized medicine while a large proportion of the doctors are serving in the armed forces and unable to defend their profession; and

WHEREAS, These groups propose medical experiments for this country, in blissful ignorance of the vast new problem which the medical profession must solve, and fortunately is solving, before there can be any assurance of a healthy America in the future; and

WHEREAS, Prior to the war, medical science had succeeded in making within our continental borders a sort of island of health, and the United States is practically rid of the most deadly maladies—malaria, typhoid, yellow fever, tuberculosis, plague and others too numerous to mention,—are either eliminated or under reassuring control; and

WHEREAS, Records will show that, in every nation where socialized medicine exists, the standard of national health is far below ours, and far less progress is made in fighting and controlling disease; and

WHEREAS, Our present American medical system, which permits an individual to select his own physician and medical service, has worked satisfactorily and has preserved that personal equation between patient and physician, and has produced health, happiness, and longer life for millions of American citizens; therefore be it

RESOLVED, That we, as members of organized medicine in this community and State, oppose any radical schemes, such as the Wagner-Murray Senate Bill 1161, for socializing medicine which, if

passed, would lower the standards of medical practice and the grade of medical service rendered our patients; and

BE IT FURTHER RESOLVED, That we go on record as opposing any other legislation, decree or mandate which will place the medical profession under Federal control and regimentation, denying

us and the public the privileges enjoyed under the American system of free enterprise and independence; and

BE IT FURTHER RESOLVED, That a copy of these resolutions be sent to our Senators, Congressmen and to the press, enlisting their support in the defeat of this bill.

LOUISIANA STATE MEDICAL SOCIETY NEWS

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport

SENATE BILL 1161

On June 3, 1943, Senator Robert F. Wagner, of New York, for himself and Senator James Murray of Montana, introduced in the Senate, Bill 1161.

If the recommendations are enacted into law, they will destroy the private practice of medicine in the United States.

Senate Bill 1161 makes provision for *free* general medical, special medical, laboratory and hospitalization benefits for more than one hundred ten million people in the United States. It proposes placing in the hands of one man, the Surgeon General of the Public Health Service, the power and authority:

1. To hire doctors and establish rates of pay, possibly for all doctors;
2. To establish fee schedules for services;
3. To establish qualifications for specialists;
4. To determine the number of individuals for whom any physician may provide service;
5. To determine arbitrarily what hospitals or clinics may provide service for patients.

The provisions are so sweeping that, if enacted into law, the entire system of American medical care would be destroyed. Immediately following are pertinent paragraphs of the Bill which create the machinery and provide the funds for these truly revolutionary procedures.

The Bill provides for the establishment of a "Unified Social Insurance System." It provides for tax payments from and insurance benefits for: (a) Practically every employed person in the United States; (b) every self-employed person.

It is estimated that these provisions of the Bill would add approximately 25,000,000 persons to the 37,000,000 now carrying social security cards.

The Bill provides (Section 901) that: (a) every insured individual and (b) every dependent entitled to benefits shall be entitled to receive general medical, special medical, laboratory and hospitalization benefits. Initially 30 days of hospitalization is provided. If funds are available this can be increased to 90 days each year.

The Bill provides (Section 903):

"(a) The Surgeon General of the Public Health Service is hereby authorized and directed to take all necessary and practical steps to arrange for the availability of the benefits under this title.

"(b) The Surgeon General shall periodically notify the Board of obligations incurred under contracts entered into by him in accordance with the provisions of this section and to whom such obligations obtain. Thereupon, the Board shall authorize and certify disbursements from the Trust Fund to meet such obligations, and such certified disbursements shall be paid from the Trust Fund."

This council has no authority. The Surgeon General selects and appoints the members. It can advise. All authority and power are vested in the Surgeon General. This is the method by which sole responsibility for the medical care and hospitalization of more than 110,000,000 people is placed on one man, the Surgeon General of the Public Health Service. In such manner is created the machinery to place in the hands of one man, the Surgeon General of the Public Health Service, the expenditure of \$3,000,000,000 annually.

The Bill, if enacted into law, would provide general medical and special medical care, laboratory tests and hospitalization for approximately one hundred ten million people. The Surgeon General of the Public Health Service is authorized and instructed to make such services available.

After two years of operation, approximately, and presumably after all doctors have been subdued, all hospitals taken over and the state control of medical education has been established, further efforts are to be made.

The Bill provides (Section 912):

"The Surgeon General and the Social Security Board jointly shall have the duty of studying and making recommendations as to the most effective methods of providing dental, nursing, and other needed benefits not already provided under this title, and as to expected costs for such needed benefits and the desirable division of the costs between (1) the financial resources of the social-insurance system and (2) payments to be required of beneficiaries receiving such benefits, and shall make reports with recommendations as to legislation on such benefits not later than two years after the effective date of this title."

The Surgeon General is to find a way to provide Nursing Service and Dental Care.

Under the American system, American medicine and American doctors have developed the most effective and the most widely distributed medical care that has ever been provided for any comparable number of people anywhere at any time.

Free men, with fearless minds, progressively provided a higher and higher quality of medical care. This better and better medical care has been continuously more widely distributed and made more generally available. Many of the great historical killing diseases have been conquered; practically all of the most deadly of the others are being brought under control.

Plans are being made and steps are being taken to bring to every American more effective medicines and medical procedures than were ever before known or imagined.

State medicine, political control of medical service, always has meant, always will mean, for the mass of people medical care through and by physicians who are politically amenable rather than by those with superior abilities and skills.

For the doctor State medicine means abject slavery; the necessity of catering to the ward committeeman or the precinct captain rather than to the needs of the human beings who are his patients.

The doctors of the United States are faced with a real emergency. If they understand—if they are informed—and will inform their legislators and their patients, they will become the final deciding factor in the settlement of the issue.

There are two choices: (1) They can demand a continuation of the practice of medicine under the Christian concept of the sanctity of human personality—the American way—with continuing progress in the science of medicine and the art of medical practice; or (2) they can refuse to be concerned and refuse to assume their part of the responsibility. The result will be the *sacrifice of*

their medical heritage, becoming mere pawns of politicians, the forfeiture of self-respect and inevitable deterioration.

The decision means free men or slaves!

Dr. C. C. de Gravelles,
New Iberia.

BI-PARISH MEDICAL SOCIETY

The Bi-Parish Medical Society met with Dr. Glenn J. Smith and Staff in the East Louisiana State Hospital. After a bounteous repast prepared by Miss Corey and assistants, the Society adjourned to the staff room for the Scientific and Business Program.

Dr. W. A. Sorrenson of Jackson, La. and Drs. Mary R. Niebergall and P. A. Niebergall were elected members of our Society. The Scientific program was presented by Drs. Wilkinson, Smith and Robards, who demonstrated with patients different phases of insanity. This presentation was appreciated by all present.

The Society adjourned to meet with Dr. M. A. Walker and Staff at Angola, Louisiana in the State Penitentiary Hospital the first Wednesday in December at 5 p. m.

Dr. G. J. Smith, Pres.
Dr. E. M. Toler, Secy.

NEWS ITEMS

The Tulane University Medical School Base Hospital No. 24, after thirteen months at Fort Benning, sailed from New York and have now arrived in North Africa. Lt. Colonel Mims Gage was detached from the Unit and made surgical consultant for the Fourth Service Command. Lt. Colonel Roy Turner was also detached and put in charge of medical service at the Lawson General Hospital.

The University of Louisiana Medical Center Base Hospital No. 64, after being mobilized for many months in this country, has been reported as arriving in North Africa.

Lt. Colonel Charles B. Odom, who for some years was resident surgeon at the Charity Hospital, New Orleans, is now attached as special surgeon to the Staff of Lt. General George Patton. He recently was cited for the Legion of Merit medal as a result of his activities in the Sicilian campaign. Colonel Odom was originally with the Louisiana State University Unit, but was detached and eventually obtained his present position.

The Association of Military Surgeons of the United States will meet in Philadelphia, October 21-23. Lt. General Sir Alexander Hood, director general of the British Army Medical Services, will be in attendance, together with the director general of the Royal Canadian Army and many other distinguished medical officers of the Allied Forces.

The 75th Liberty ship built by the Delta Shipbuilding Company was given the name of Joseph Goldberger. Dr. Goldberger's outstanding and trail blazing work in the field of nutrition thus receives further recognition. Dr. Goldberger married a New Orleans woman, and his son, Dr. Joseph Herman Goldberger, who is now in El Reno, Oklahoma, graduated from Tulane University in 1935.

AMERICAN BOARD OF OBSTETRICS

The next written examination and review of case histories (Part I) for all candidates will be held in various cities of the United States and Canada on Saturday, February 12, 1944 at 2:00 p. m. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held later in the year. All applications must be in the office of the Secretary by November 15, 1943.

NEW DIRECTOR OF THE CHILD GUIDANCE CENTER

Rabbi Emil Leipziger, president of the board of the Child Guidance Center, has announced the appointment of Dr. Milton Kirkpatrick as executive director of this organization. Dr. Kirkpatrick is a psychiatrist who has been interested for many years with problems of childhood maladjustment. Prior to his accepting this position in New Orleans, he was director of the division on community clinics of the National Committee for Mental Hygiene. At one time he was psychiatrist for the juvenile court in Cleveland; he held a Rockefeller Foundation fellowship at the Institute of Child Guidance in New York; he was a member of the American Psychiatrist Association, and he is a diplomat of the American Board of Neurology and Psychiatry.

Dr. Kirkpatrick succeeds Dr. Martha MacDonald who has accepted a position in the Children's Bureau in Washington. The board of the Child Guidance Center is particularly fortunate in having obtained the services of a nationally known psychiatrist and one who has been interested in child psychiatry for many years.

UNITED STATES PUBLIC HEALTH SERVICE

P. A. Surgeon Robert C. Morrey has been relieved from duty in New Orleans and sent to Washington, D. C. P. A. Surgeon David B. Wilson has been relieved from duty in Jackson, Miss. and ordered to Public Health Service District No. 4 in New Orleans. Asst. Surgeon William D. Brand, Asst. Surgeon W. L. Bunch, Asst. Surgeon John K. McBane, and Asst. Surgeon D. W. Slagle have been ordered to Marine Hospital, New Orleans. P. A. Surgeon H. J. Nagler has been ordered from New Orleans, to Mobile, Ala.

REPORTED CASES OF SYPHILIS UP 21 PER CENT

An increase of 21 per cent in number of persons with syphilis reported as seeking treatment in fiscal 1943 as compared with fiscal '42 is indicated in reports of State and Territorial health departments, according to an estimate for the whole of fiscal '43 based upon the first six months of the year. Both doctors and clinics participated in the reported increase; physicians reported 212,000 cases (36,000 more than 1941, last peacetime year) while clinics reported about 378,000 (60,000 more than 1941). Considerable part of the increase in reported cases arises from cases uncovered and brought to treatment as a result of routine blood tests made by Selective Service and as a part of premarital and prenatal examinations. Serologic tests have increased by 53 per cent as a result of these mass testing programs. Reports of the States on gonorrhea indicate almost 300,000 new cases reported for fiscal '43, an increase of 28.3 per cent over fiscal '42. Tests increased 10 per cent and distribution of sulfonamide tablets almost 70 per cent. (V. D. War Letter, Aug. 31, 1943).

PEGLER SAYS

In a recent column in the New Orleans States, Westbrook Pegler discussing vitamins paid indirect tribute to the physician:

"People must be buying them (vitamins) in enormous quantities and in their various guises or the promoters would not have the money to maintain the propaganda, but I think you will agree that there has been no perceptible reinvigoration of the whole public and I dare say that we should not be perceptibly worse off for their total repudiation *except under the doctor's orders.*

"There is also an insistent appeal to all of us to dope ourselves with certain cures for the headache which is not an illness of itself but a symptom, usually to be endured briefly and cured by natural processes, or otherwise, *to be investigated by a physician.*"

SHORTAGE OF NURSES

The attached statement has been issued by the Directing Board of War Manpower Commission's Procurement and Assignment Service for Physicians, Dentists, Veterinarians, Sanitary Engineers, and Nurses. The Directing Board would appreciate your cooperation in calling to the attention of members of your profession the important problems discussed in the statement.

A critical shortage of nurses exists. Here are the facts:

Over 36,000 nurses are now with the armed forces and the Red Cross has accepted responsibility for the recruitment of an equal number by June 30, 1944. Our men are receiving skilled medical care of a high order as shown by the high percentage of

recovery from injury. Skilled nursing is an important factor in such care. Then, too, the very presence of nurses near the bases of military operations has repeatedly been described as a potent force in maintaining morale.

There has been an unprecedented increase in the use of civilian hospitals. Hospitals gave fourteen and a quarter million more days of care in 1942 than in the preceding year and the trend still is definitely upward. This is in keeping with the rapid growth of the Blue Cross (group hospitalization) plans and the Children's Bureau hospitalization program for the care of the families of service men.

Nursing is essential to the nation's health. The National Nursing Inventories (of nursing resources) of 1941 and 1943, by the U. S. Public Health Service, offer a comparison of data for the two years.

TABLE I
NATIONAL NURSING INVENTORIES

	1941	1943
<i>Total returns</i>	289,286	259,174
<i>Active</i>		
Institutional	81,708	77,704
Public Health	17,766	18,900
Industrial	5,512	11,220
Private duty	46,793	44,299
Other	21,276	18,476
<i>Inactive but available for nursing</i>	25,252	38,746 (of these 23,576 are married and under 40)
<i>Inactive, not available</i>	90,979	49,829
In Nurse Corps of Army and Navy	6,371	over 36,000 (precise data not available)

The total number of nurses graduated in the two years is well in excess of the number withdrawn for military service; this fact is not apparent in the inventory. The returns are apparently incomplete. Active nurses who did not return their questionnaires apparently did not realize the profound importance of the information requested. This information is the basis for present planning and safeguarding the future.

The relatively small decrease in the number of institutional nurses is much less significant than the increased use of hospitals in creating the serious shortage of nurses. The increased number of nurses in industrial nursing is, of course, not surprising.

Here is the program of the new Nursing Division of the Procurement and Assignment Service. The Red Cross recruitment committee are pledged to recruit 36,000 nurses this year. The new division will (1) determine the availability for mili-

tary service or essentiality for civilian service of all nurses eligible for military service and submit such determinations to the American Red Cross for use in procurement of nurses for the Armed Forces; (2) promote plans for maximum utilization of full-time nurses and those who are able to serve only part time; (3) develop and maintain a roster of all graduate registered nurses, and (4) develop and encourage sound methods of supplementing the work of nurses with non-professional personnel.

Through the War Manpower Commission, nursing will not only have the benefit of the experience of medicine in the procurement and assignment of physicians, but means will be found to interpret wartime nursing to physicians and their cooperation secured in effecting desirable wartime adjustments.

INFECTIOUS DISEASES IN LOUISIANA

For the week ending August 7, pulmonary tuberculosis was the only disease that occurred in numbers greater than 10 which were listed in the Weekly Morbidity Report for the State of Louisiana. There were 49 such cases reported. Of the rarer conditions, four cases of poliomyelitis were reported, two from Caddo and two from Orleans Parish. Six cases of typhus fever were listed for this week. The following week which ended August 14 there were recorded 47 cases of pulmonary tuberculosis, 16 of bacillary dysentery, 13 each of mumps and whooping cough, 11 of malaria. Seven cases of poliomyelitis were listed this week, all from the northern part of the state. Eight cases of diphtheria were likewise listed. Listed among "other diseases" were 23 cases of unclassified pneumonia. For the week which came to an end August 21, 69 cases of pulmonary tuberculosis were listed, 22 of measles and 10 of diphtheria. This week six cases of poliomyelitis were listed and six of typhus fever. For the week of August 28, the monthly report of venereal diseases appeared. For the month there were reported 361 cases of syphilis, 507 of gonorrhea, 16 of lymphopathia venereum, and 76 of chancroid. Other diseases occurring in numbers greater than 10 include 27 cases of pulmonary tuberculosis, 13 of bacillary dysentery, and 10 of malaria. Only two cases of polio were reported this week. For the week which closed September 4 apparently there was an epidemic of food poisoning, because 150 cases were listed. There were also 36 cases of pulmonary tuberculosis. Only one instance of poliomyelitis was recorded and three of typhus fever in this particular week.

HEALTH OF NEW ORLEANS

The Bureau of the Census, Department of Commerce, reports that for the week ending August 7 there were 139 deaths in the City of New Orleans as contrasted with 161 the previous week. These deaths were divided 88 white, "all others" 51. For

the week which ended August 14 there were 143 deaths, 100 white, 43 all others, with 18 of the deaths occurring in children under one year of age. The week ending August 28 found 150 people dying in the city, 104 of whom were white and 11 of whom were children. This is somewhat above the three year average for the corresponding week. For the week which ended on September 4 there were 145 deaths, apportioned 88 white, 57 all others, with only 8 deaths in children under one year of age. This death rate is somewhat higher than usual, the three year average for this corresponding week being only 109.

THEY BUILT THE SOUTH*

Historians often err in overemphasizing the importance of statesmen and soldiers to the progress of mankind. Doctors have done as much for the development of Louisiana as politicians. In conquering tropical diseases, Louisiana first became liveable and affluent.

In that select company of physicians, Dr. Stanford E. Chaille is included. He was born in Natchez, July 9, 1830, the only child of William Hamilton and Mary Stanford Chaille.

As early as 1396 and for many years thereafter the Chaille family provided Portiers, France, with leaders and officials. In 1650 one branch of this ancient Catholic family became Huguenots, and Pierre Chaille, during a period of religious persecution, escaped to England and then migrated to Boston. Pierre's son, Moses, settled in Maryland and to Moses, Stanford Chaille traced his ancestry. Three of Dr. Chaille's four great-grandfathers were soldiers in the war for independence. His father and mother were born in Maryland and emigrated to Natchez in 1819. His father died when he was six and his mother when he was 14.

Stanford, an only child, was educated under private tutors until his mother's death. She appointed as her son's guardian, Hubbard Emerson of Massachusetts, her husband's closest friend and her son's godfather.

Studied Abroad

Stanford made his home with his guardian who became his second father. He entered Philadelphia academy at South Andover and upon his graduation became a student at Harvard college, receiving the degree of A. B. in 1851. He began the study of medicine at the University of Louisiana (now Tulane) in 1851, graduated in 1853 and returned to Harvard to receive his M. A. degree in 1854.

During his studies at Tulane, Dr. Chaille was resident student in the New Orleans hospital and resident physician at the United States Marine hospital. He served as physician to the Circus (Rampart Street Infirmary), for many years was co-editor of the New Orleans Medical and Surgical Journal and demonstrator of anatomy at Tulane. In 1850 he was a student in Paris in the laboratory



DR. STANFORD EMERSON CHAILLE

of Claude Bernard, world-famous physiologist. He renewed his studies in Paris in 1866.

Dr. Chaille was twice married, in 1857 to Laura E. Mountfort, who died a year later leaving one daughter, Mary Laura; in 1863 to Mary Louise Napier of Macon, Ga., who died in 1873.

During the War Between the States, Dr. Chaille volunteered as a private of the New Orleans Light Horse. He became acting surgeon general of Louisiana, surgeon and medical inspector of the Army of Tennessee on the staff of General Braxton Bragg and surgeon in charge of army hospitals in Atlanta. He was captured in 1865, paroled and returned to New Orleans, to resume his old duties at the university where he also served as lecturer on obstetrics and professor of physiology and pathological anatomy.

Appointed Dean

In 1878, Dr. Chaille was chosen to deliver one of the 10 addresses on medical jurisprudence before the International Medical Congress in Philadelphia. He was appointed by the United States Congress as one of 12 experts to investigate the yellow fever epidemic of 1878 and was later chosen president of the Havana yellow fever commission. He was commissioned civilian member of the national board of health in 1885 by President Chester A. Arthur and continued to serve in that capacity until the commission was abolished by Congress in 1893.

He was chosen dean of the medical department of Tulane university in 1885 and professor of physiology, hygiene and pathological anatomy in 1889. He represented Louisiana on a committee that organized the Pan-American Medical Congress in 1891.

Dr. Chaille's contributions to medical literature were voluminous.

He was the physician and confidant of Jefferson Davis, his most honored friend in prosperity and adversity. He attended the Confederate president in last illness in 1889.

Dr. Chaille was a thorough student of yellow fever epidemics from 1850 until his death, May 27, 1911. As chairman of the committee on state medicine in the Louisiana State Medical Society he was largely responsible for changes in the Louisiana Constitution of 1879 that authorized state medicine.

*Republished through the courtesy of Mr. Clayton Rand and the Times Picayune.

DR. HECTOR E. BERNADAS

(1879 - 1943)

One of the most popular and best liked members of the State Society died rather suddenly in New Orleans on September 22. Dr. Bernadas had been sick for several years, but was up and about and leading a somewhat restricted life. His death was totally unexpected.

Dr. Bernadas has been one of the most active workers in organized medicine in the state. He was at one time vice-president of the Orleans Parish Medical Society and was president of that organization in 1919 and 1920. Dr. Bernadas was first elected a delegate to the State Medical Society in 1917 and held office continually until his death. For three years he was chairman of the House of Delegates. He was elected councilor of the First District in 1925, which position he occupied at the time of his demise, and was Chairman of the Council from 1926 on.

The Parish and State Medical Societies lose one of their most illustrious workers in the passing of this splendid character. In addition to his loss to organized medicine, Dr. Bernadas leaves behind him a host of good friends and grateful patients.

DR. RUFUS E. APPLEWHITE

(1880 - 1943)

Dr. Rufus E. Applewhite of Winnsboro was born in Tylertown, Mississippi in 1887. He attended Mississippi State University, and graduated in medicine from the Memphis Hospital Medical College in 1913. He later took up post-graduate work at Tulane University. He did private practice in Watson, Arkansas until 1928, when he accepted a position as Public Health doctor of Franklin Parish. At the time of his death, on May 3, 1943, Dr. Applewhite was Secretary-Treasurer of the Franklin Parish Medical Society.

DR. HENRY LARKIN GREEN

(1880-1943)

Dr. Henry L. Green was born in Oakland, Louisiana in 1880. His preliminary education was received at the public schools in Union Parish and

Mt. Lebanon College in Bienville Parish. He received his B. S. degree from Louisiana State University in 1906 and graduated in medicine in 1914 from the University of Pennsylvania. He interned at the Chestnut Hill Hospital in Philadelphia. Dr. Green has practiced in Shreveport since his internship and specialized in internal medicine. He was on the staff of the Tri-State Hospital and was a medical examiner for the draft board. Dr. Green was a member of the Louisiana State Medical Society since 1917, and died in Shreveport on June 22, 1943.

DR. D. FREDERICK WAIDE

(1883 - 1943)

Dr. D. Frederick Waide was born in Nicholasville, Kentucky in 1883. He graduated in medicine from the University of Louisville in 1908, and did postgraduate work at Tulane University. At the time of his death on September 14, 1943, he was Secretary-Treasurer of the Second District Medical Society.

WOMAN'S AUXILIARY

The following are the officers of the Woman's Auxiliary to the Louisiana State Medical Society for 1943-1944:

Officers

President—Mrs. George J. Taquino, 18 Fontainebleau Drive, New Orleans.

President-elect—Mrs. Rhodes Spedale, Plaquemine.

First Vice-President—Mrs. W. R. Harwell, 715 Elmwood, Shreveport.

Second Vice-President—Mrs. A. D. Tisdale, Riverside Sanitarium, Monroe.

Third Vice-President—Mrs. D. B. Barber, Pineville.

Fourth Vice-President—Mrs. Thos. Richardson, Minden.

Treasurer—Mrs. Paul Lacroix, 3122 State Street Drive, New Orleans.

Recording Secretary—Mrs. E. Ellender, Houma.

Corresponding Secretary—Mrs. Waldemar Metz, 2437 Jefferson Avenue, New Orleans.

Chairmen of Standing Committees

Archives—Mrs. Jerome E. Landry, 2336 Milan Street, New Orleans.

Bulletin—Mrs. Cassius L. Peacock, 8415 S. Claiborne Avenue, New Orleans.

Cancer Control—Mrs. Edmond Souchon, 3136 Octavia Street, New Orleans.

Doctor's Day—Mrs. C. R. Gowen, 5900 Line Avenue, Shreveport.

Entertainment for Men in Service—Mrs. Arthur D. Long, Jr., 1367 Steele Blvd., Baton Rouge.

Exhibits—Mrs. Donovan C. Browne, 4920 St. Charles Avenue, New Orleans.

Finance—Mrs. Carl Young, 1811 Jahncke Avenue, Covington.

Historian—Mrs. Edward C. Melton, Plaquemine.
Hygeia—Mrs. Robt. W. O'Donnell, 117 Stone Avenue, Monroe.

Indigent Widows—Mrs. Aynaud Hebert, 2013 Napoleon Avenue, New Orleans.

Organization—Mrs. B. C. Garrett, 4700 Fairfield, Shreveport.

Parliamentarian—Mrs. M. H. Foster, 1316 Albert, Alexandria.

Press and Publicity—Mrs. M. C. Wiginton, Hammond.

Printing—Mrs. Willard Wirth, 402 Vincent Avenue, New Orleans.

Program—Mrs. DeWitt Milam, 1704 Island Drive, Monroe.

Public Relations—Mrs. John S. Dunn, 8410 Pontchartrain Blvd., New Orleans.

Red Cross—Mrs. Clarence B. Erickson, 423 Herndon Avenue, Shreveport.

Revision of By-Laws—Mrs. C. Grenes Cole, 4938 St. Charles Avenue, New Orleans.

Councilors

First District—Mrs. Daniel J. Murphy, 127 S. Solomon Street, New Orleans.

Second District—Mrs. Daniel N. Silverman, 47 Versailles Blvd., New Orleans.

Third District—Mrs. C. C. deGravelles, New Iberia.

Fourth District—Mrs. R. T. Lucas, 535 Perremont Road, Shreveport.

Fifth District—Mrs. A. G. McHenry, 1910 Riverside Drive, Monroe.

Sixth District—Mrs. A. W. Martin, 902 Virginia Avenue, Bogalusa.

Seventh District—Mrs. J. D. Frazar, DeRidder.

Eighth District—Mrs. H. O. Barker, Horse Shoe Drive, Alexandria.

OUACHITA PARISH MEDICAL SOCIETY

Seated at a beautifully appointed table, fragrant with clematis overflowing from an immense crystal bowl, members of the Women's Auxiliary to the Ouachita Parish Medical society met for luncheon in the Butterfly room of the Frances Hotel last week following a period of inactivity.

Mrs. P. L. Perot, the president, presided and in-

troduced the speaker, Mrs. Clifford Johnson who read an excellent article on "Doctors' Wives Organize for War Service."

The new officers were all present on this occasion and were introduced as follows: President elect, Mrs. A. B. Gregory; first vice-president, Mrs. F. C. Bennett; second vice-president, Mrs. D. M. Moore; treasurer, Mrs. A. D. Tisdale; recording secretary, Mrs. H. V. Collins; corresponding secretary, Mrs. I. J. Wolff; publicity, Mrs. W. L. Bendel; historian, Mrs. J. E. Walsworth; parliamentarian, Mrs. R. W. O'Donnell.

Those present were: Mesdames Prentice Gray, J. B. Vaughan, K. W. Brown, R. W. O'Donnell, A. G. McHenry, Marvin Meengs, DeWitt Milam, Wyatt C. Simpson, A. H. Cannon, S. W. Shelton, Clifford U. Johnson, Lenard L. Shlenker, Henry E. Guerriero, A. D. Tisdale, J. Q. Graves, P. L. Perot, H. V. Collins, F. C. Bennett, G. A. Varino, John Pracher, G. T. Gallaspy, A. L. Peters, A. B. Gregory, C. P. Gray, Sr., D. M. Moore, and W. L. Bendel.

I was disappointed not to have had anything for the Journal last month but due to the inactivity of the Auxiliaries during the summer months there was nothing to report.

Just having returned from a trip east where I have been for the past month attending special clinics, along with the Doctor, I had the privilege of meeting a number of doctors' wives from all over the country and even though they are not active in Auxiliary work, due to their moving around so frequently, they are doing a great amount of work in various Red Cross and defense organizations. We want them to know how proud we are of them and of the work they are doing and the cheerful manner in which they are carrying on under many obstacles and inconveniences. We, who are left behind, shall endeavor to do our part in the same way and with more determination than ever to keep our Auxiliary functioning in such a way that they too can be proud of us.

With each one of us assuming our full responsibility, conscientiously, it can—and will be done.

Mrs. Marquis C. Wiginton,
Publicity Chairman.

BOOK REVIEWS

Allergy Anaphylaxis and Immunotherapy: By Bret Ratner, M. D. Baltimore, The Williams & Wilkins Company, 1943. Pp. 334. Price, \$8.50.

Clinically, the responses of immunity and hypersensitiveness appear to be sharply delimited the one from the other. In point of fact an infinity of gradations is present linking these two extremes hence a book dealing with allergy and immunotherapy is perfectly logical.

The first section of the book deals with the prin-

ciples and practice of immunotherapy. A complete description is given of the materials used in diagnosis, prophylaxis and therapy of infectious diseases; agents are then considered in a wealth of practical clinical detail.

Far and away the most comprehensive survey of serum disease the reviewer has seen is to be found in the second portion of the book which deals with allergy to immunotherapeutic agents. One would not have believed it possible for 145 pages of care-

fully thought out text to be devoted to this topic. This portion of the book has chapters on reactions from blood transfusions and on drug allergy. A brilliant survey of the physiological pathology of the allergic state closes the book.

This text should have its greatest appeal to those who treat infectious disease but it can be highly recommended to the allergist as well.

VINCENT J. DERBES, M. D.

Blood Groups and Transfusion: By Alexander S. Wiener, A. B., M. D., 3d ed. Springfield, Illinois, Charles C. Thomas, 1943. Pp. 438, illus. Price, \$7.50.

This book has been brought up-to-date and the author has well summarized our knowledge concerning the theories, technics of blood grouping, technics of transfusion, and has assembled the essential facts concerning the transfusion of whole blood, plasma, and serum.

In this edition two new chapters have been added; one dealing with the transfusion of stored blood and blood substitutes, and the other with the recent discovered Rh factor and its role in erythroblastosis fetalis.

Since the book has been brought up-to-date and the subject presented in such a way that it is readable to those unacquainted with the subject it should be added to the increasing reference reading list.

REYNOLD PATZER, M. D.

Textbook of Gynecology: By Arthur Hale Curtis, M. D. 4th ed. reset. Philadelphia, W. B. Saunders Co., 1942. Pp. 720, illus. Price, \$8.00

The fourth edition of Curtis' Gynecology has been completely reset. Many changes and rearrangements have been made.

The chapter on pelvic and peroneal anatomy has been elaborated upon. The chapter on gonorrhea has been largely rewritten to include newer methods of culture of gonococci and revolutionized therapy with sulfa drugs.

A great deal has been added to the chapter on uterine myoma and the chapter on carcinoma of the cervix more clarified and simplified. The section on ovarian tumors has been completely reset.

The text is beautifully and clearly illustrated, particularly the illustrations of the technic of radical operations.

ADOLPH JACOBS, M. D.

An Atlas of the Basal Ganglia, Brain Stem and Spinal Cord: By Henry Alsop Riley, M. A., M. D. Baltimore, The Williams & Wilkins Company, 1943, pp. xi + 708; plates 259. Price, \$13.50.

This atlas is a collection of fully labeled photographs of Weigert-stained sections of the spinal cord and brain. The original preparations are of exceptionally fine quality, and both the photography and photo-engraving process have done jus-

tice to them. Most of the plates measure about $7\frac{1}{2} \times 9\frac{1}{2}$ inches, the photographs having been made at enlargements sufficiently great to bring out all the features of interest in preparation of this character. In addition to the more accustomed transverse sections, horizontal and sagittal sections of the brain are included. Key plates, photographs of the gross specimens marked by lines indicating levels, supply a helpful guide to orientation of the brain sections. Each plate is labeled by lettering overlaid on the indicated structures, the lettering being an ingeniously abbreviated code to the names, as listed on a facing page. An alphabetical "List of structures," arranged according to the abbreviations used in labels, covers 171 pages. In this list the structures are concisely characterized. The volume concludes with a bibliography of six pages.

HAROLD CUMMINS, Ph. D.

Human Neuroanatomy: By Oliver S. Strong and Adolph Elwyn. Baltimore, The Williams & Wilkins Company, 1943. Pp. x + 417; figs. 320. Price, \$6.00.

It is a significant indication of the status of neuroanatomical text-books that the present volume is the fourth new text on the central nervous system to appear within about a year. This demand is evidently created by lack of general satisfaction with texts in the field. Students face major difficulties in their efforts to gain a working knowledge of the subject; the time that can be devoted to it is short; the subject matter, even when reduced to essentials, is intricate. The success of a text-book can be measured only by actual trial, to determine how effectively it helps the student through these difficulties. An examination of Strong and Elwyn's text suggests that it is at least as promising as others now available. Only use in the hands of students can show whether the book is superior.

The long teaching experience of the authors places them in a favorable position to become acquainted with the needs of subject matter and methods of presentation adapted "to give the student and physician a thorough and clear presentation of the structural mechanisms of the human nervous system together with some understanding of their functional and clinical significance."

The first seven chapters are devoted to basic structural and functional considerations, largely in relation to individual neurones and the supporting tissues. Chapter VIII deals with meninges and cerebrospinal fluid. Chapter IX is a description of the gross and minute anatomy of the spinal cord, and Chapter X considers its fiber tracts. Chapter XI is a description of the peripheral portions of the autonomic system. Chapter XII is a general description of the brain; the succeeding eight chapters are devoted to detailed descriptions of the brain components—a chapter each on medulla, pons, mesencephalon, cerebellum, diencephalon and striate body, cerebral hemispheres, cerebral cortex, blood supply of brain. The illustra-

tions are well chosen and instructively designed. The style is clear and direct. Functional aspects are emphasized, though from this standpoint the organization of subject matter is at some points unfortunate; for example, spinal tracts are presented in detail before the reader has gained information of their significance as links in functional pathways.

HAROLD CUMMINS, Ph. D.

Physiology in Aviation: By Chalmers L. Gemill, B. S., M. D. Springfield, Ill., Charles C. Thomas, 1943. Pp. 129. Price, \$2.00.

This small handbook contains the material covering the Lectures in Physiology given in the School of Aviation Medicine, Naval Air Station, Pensacola, Florida. It is, in general, an excellent, short account of the physiology of respiration and circulation and the effects of altitude and flying on these systems. Chapters on the temperature control of the body and the physiology of muscular exercise, as well as a particularly fine discussion of instrument flight, are also included.

By way of minor criticism, it would seem that the chemoreceptors of the aortic bodies should have been included in the discussion of the chemical control of respiration, in addition to the carotid bodies. The second paragraph on page 69 contains conflicting statements as to the barometric pressure at 34,000 feet.

HYMEN S. MAYERSON, Ph. D.

Diseases of the Nose, Throat and Ear: By William Lincoln Ballenger, M. D., F. A. C. S. and Howard Charles Ballenger, M. D., F. A. C. S. 8th ed. rev. Philadelphia, Lea & Febiger, 1943. Pp. 975, illus. Price, \$12.00.

A revision of the old Ballenger with elimination of the obsolete and addition of the newer methods and techniques again makes this eighth edition a most valuable asset for the otolaryngological student.

Various chapters have been contributed by different authors who excel in their particular subjects, adding much to the value of this work.

Unfortunately, however, gross errors occasionally occur in work of this magnitude which may be of considerable significance. Such an error has been made in describing the technic of the Lynch frontal operation.

The erroneous statement is made that in the Lynch operation the periosteum over the frontal plate of the frontal bone is elevated. If this description is followed by the uninitiated, the final results will be very disappointing. One wonders if many other errors or mis-statements are included in the remainder of the text.

F. E. LEJEUNE, M. D.

A Manual of Otolaryngology, Rhinology, and Laryngology: By Howard Charles Ballenger, M. D., F. A. C. S. 2d ed. enl. & rev. Philadelphia, Lea & Febiger, 1943. Pp. 334, illus. Price, \$4.00.

This book has always been held in high esteem. It is a very valuable outline of ear, nose and throat diseases.

This second edition is as concise as the first and differs only slightly from it. New conditions, as aviation sinusitis, have been added. Newer treatments of old conditions, as the oily estrogenic solution for chronic atrophic rhinitis, have also been included.

The chapters on foreign bodies in the air passages, and that on the indications and the technic of tracheotomy are the most radical changes in the book.

JEANNE ROELING-HENLEY, M. D.

Whooping Cough: By Joseph H. Lapin, B. Chem., M. D. Springfield, Illinois, Charles C. Thomas, 1943. Pp. 237. Price, \$4.50.

The work is well organized, up-to-date, and contains chapters on epidemiology, bacteriology, pathology, immunology, serology, clinical manifestations, hematology, roentgenology, complications, diagnosis, prophylaxis of contacts, specific treatment, non-specific treatment, treatment of complications and public health considerations. Such a volume should certainly be a welcome addition to the library of any physician dealing with pertussis!

Lack of agreement between various serologic tests and observed clinical immunity is properly emphasized in the section on "specific treatment"; claims and counterclaims appearing in the sections on "Immunology" and "Serology" deserve this same emphasis and qualification to justify the confusion arising so naturally in a review of such controversial opinions.

Sympathy is due the author for facing the ordeal of attempting to review comprehensively such a confusing and often contradictory literature as that dealing with this disease. It would seem that the work should have included more of the author's own short "discussions", in which he sums up, arbitrates, and attempts to rationalize widely divergent opinions.

The final chapter sets forth commendable public health recommendations; though these are probably too elaborate for complete adoption at the present time, they should certainly serve well as an authoritative basic guide for officials beset with increased hazards in the control of this disease in our overcrowded defense areas, and the consequent urgent need for revision of our present inadequate regulations.

R. V. PLATOU, M. D.

War Injuries of the Chest: Edited by H. Morriston Davies, M. Ch., F. R. C. S. and Robert Coope, M. D., F. R. C. P. Edinburgh, E. and S. Livingstone, 1942. Pp. 131. Price, \$2.25.

This short monograph is a splendid resumé of war injuries. It is profusely illustrated and is

very sound from the standpoint of clinical manifestations and treatment. It is unfortunate that in such a splendid book that chloroform is spoken of as a possible anesthetic agent even though it is stressed that "its toxicity demands that it be used with extreme care." The book is, however, extremely compact and not the least of its virtues is the fact that it is small and has a flexible binding which would make it possible to carry it in one's pocket without any difficulty.

ALTON OCHSNER, M. D.

Principles of Extra-Peritoneal Caesarean Section:

By James F. Ricci, A. B., M. D., and James Pratt Marr, M. D., F. A. C. S. Philadelphia, Blakiston Co, 1942. Pp. 224. Price, \$4.50.

This book covers in a compact and concise way the history and development of the various forms of extra-peritoneal caesarean section and should serve as a ready reference for any information on this subject if same is desired.

The author's careful discussion of the anatomy and histology of the isthmus and the lower segment is complete and gives the reader an accurate understanding of the structures encountered in performing this operation. The careful presentation of the anatomy and histology of the fascia and its relationship to the bladder, lower segments, and peritoneum should be of great service to the surgeon who does this type of work.

The various types of extra-peritoneal caesareans and technics are enumerated in a complete and careful manner.

This book should be of much service to the obstetrician who does surgery, or as a ready reference book for statistical data.

WILLIAM D. PHILLIPS, M. D.

Sulfonamide Compounds in the Treatment of Infections: By Maurice A. Schnitker, M. D. New York, Oxford University Press, 1942. Pp. 195. Price, \$2.00.

The presentation of the present concepts of the clinical use of sulfonamides is discussed in a clear and concise manner. This has been accomplished by the author's restricting the discussions to the clinical application, referring to laboratory in vivo and in vitro experiments only when there is doubt as to its value in the treatment of certain bacterial infections.

The sulfonamides are discussed separately. Under each subject the authors discuss methods of administration, the clinical uses of each of the sulfa drugs. In these sections stress is laid on the infections in which each drug exerts its most specific action, as well as those infections in which the efficacy of the drugs is doubtful. These infections are given in the form of tables, which are very inclusive. There is no question that there is

a difference of opinion as to the efficacy of these drugs in certain infections. This has arisen from the confusion of reports, many of which are from poorly controlled and poorly conceived experiments. However, the author does give the prevailing consensus of opinion of the action of these drugs in the different infections.

The first chapters present in a very concise manner the important facts dealing with the history of the development of these drugs, their chemistry, methods of assaying the efficacy of the drugs, a discussion of their pharmacological actions, and a discussion of the most plausible theories of the mode of action of these drugs. Only the important features of each of these points are brought out. This should simplify and clarify these confusing issues for the average reader. For those who wish to delve further into the mysteries of these drugs, the bibliography which is included will be of value.

The value of any book on the use of sulfonamides will depend entirely on a conservative attitude of the author. Many of the preceding treatises on the same subject have been written by investigators who in their desire to present their knowledge have permitted their enthusiasm to outrun their better judgment. Many of the claims made by these authors have had to be modified or retracted. I do not feel that the present treatise under discussion is as guilty of this as have been other similar books on the same subjects.

In my opinion this book will be a valuable adjunct to have in the library. The students should be able to read this book intelligently and to great advantage. As a guide to therapy it will contain sufficient information to be of value to the therapeutic doctor. For those who care to delve into the mysteries of these drugs, this book would prove valuable as a starting reference for the more detailed investigations which would follow. I think this book would be of value if starred as one of the preferred articles on the student's reading list.

ALFRED B. LONGACRE, M. D.

PUBLICATIONS RECEIVED

C. V. Mosby Company, St. Louis: *Reconstructive Surgery of the Eyelids*, by Wendell L. Hughes, M. D., F. A. C. S.

Paul B. Hoeber, Inc., New York and London: *Nervousness, Indigestion, and Pain*, by Walter C. Alvarez, M. D.

Cornell University Press, Ithaca, New York: *Virus Diseases*, by Members of the Rockefeller Institute for Medical Research.

Comstock Publishing Company, Inc., Ithaca, New York: *The Infectious Diseases of Domestic Animals with Special Reference to Etiology, Diagnosis, and Biologic Therapy*, by William Arthur Hagan, D. V. M., D. Sc.

New Orleans Medical

and

Surgical Journal

Vol. 96

NOVEMBER, 1943

No. 5

PNEUMONIA IN THE ARMY*

LT. COL. E. V. ALLEN, M. C.†

and

CAPT. LESTER W. BAIRD, M. C.‡
CAMP CARSON, COLO.

For the past seven months, I have been engaged, as Medical Consultant for the Seventh Service Command, in visiting Station and General Hospitals at various military camps in nine mid-western states. As part of my assignment, I have had the privilege of seeing several thousands of patients with some hundreds of medical officers. The experience has been a gratifying one; and since I am enthusiastic about the quality of medical care in these hospitals, I am taking the opportunity of introducing my talk on "Pneumonia in the Army" with a few comments on the type of professional service which is given to soldiers. I am certain that you would be proud of the medical profession if you saw it in action in the Army; and I am equally certain that you would be gratified if you saw how well sick soldiers are cared for in the Army. Many of you have sons in the Army. More of you have friends whose sons are in the Army. It will gladden your hearts as it has gladdened mine to know that these boys are well cared for when they are sick. In fact, it is a conviction with me that sick soldiers in the Army are receiving, in general, better care than they received in civilian life. This conviction is adequately supported by mortality statistics. It is doubted that as small

a percentage of patients in the Army with serious diseases as pneumonia and meningococcus meningitis, have died of these diseases in all the history of the world. I do not want to claim too much credit for medical officers in the Army, for the care by nurses, the use of sulfonamides, the comparative youth of the patients and their general good health, the early treatment—all these have been important in effecting the high percentage of recoveries. Nonetheless, the prompt and persistent care by young, well trained physicians who have acquired broad experience has been in the forefront of the various factors which have produced such excellent results.

Some of you may have been in station hospitals at Army camps. Perhaps you have been impressed or even depressed by the temporary structures which constitute hospital buildings in the Army. But a hospital is more than a building. In addition to that it is laboratory facilities, equipment, care by nurses and doctors, spirit and morale. When these are good, physical surroundings are of minor importance. Such is the situation in the Army. I would be flying in the face of good common sense if I represented medical practice in the Army as a state of perfection. At smaller station hospitals, even facilities and talent are sometimes deficient. To deny deficiencies would be to distort truth. My statements refer to the practice of medicine in general, in the Army. Nowhere has the valuable harvest of good medical education been more evident than it is in the Army today. Many of you have doubtless had some misgivings about the quality of med-

†Medical Consultant, Seventh Service Command.

‡Section on Roentgenology, Camp Carson, Colo.

*Delivered before the New Orleans Graduate Medical Assembly, New Orleans, March 15-18, 1943.

cal care in the Army which is now largely in the hands of professional associates in civilian life. They, 35,000 of them, have done and are doing a job which is a credit to the medical profession at large and a tribute to medical education in these United States. Your boy, your neighbor's boy and their Army associates are being cared for in an excellent manner when they are sick. Make no mistake about that, for, rumors and prejudices to the contrary, the quality of medical practice in the Army is on a very high level. Illustrative of this is the record relating to meningococcus meningitis. In four of the large station hospitals in the Seventh Service Command, there have been 132 cases of meningococcus meningitis with three deaths—a mortality rate of 2.3 per cent. That is an enviable record which is illustrative of good medical care in the Army.

CLASSIFICATION OF PNEUMONIA

Anyone who reads the literature on pneumonia will be confused by the terminology used. There is a great confusion of terms because the bacteriologist has one classification, the clinician another, the roentgenologist another, and the pathologist still another. Such terms as lobar, lobular, broncho, primary, metastatic, secondary, postoperative, typical, atypical, interstitial, influenzal, bacterial, virus, and pneumonitis perplex the uninitiated and expert alike. The commonly used designations typical and atypical are, of course, unsatisfactory, because, according to experience this year, what is called atypical pneumonia could be regarded as typical because it is the most common. This would make the typical pneumonia atypical this year. One could speak, therefore, of atypical typical or typical atypical pneumonia.¹ If this review of terms has confused you, your minds are in the same state as ours regarding this matter. Reimann has recently written that "nomenclature according to cause is the most desirable, that is, pneumococcus type I pneumonia, streptococcus hemolyticus psittacosis pneumonia, etc., and never minding whether it is clinically typical or

not."¹ Unfortunately, the cause of many pneumonias is not known. Those interested primarily in pneumonia have done much to bring order out of this chaos as is well illustrated in Reimann's monograph on pneumonia.² Army medical authorities have presented a workable classification which clarifies the subject as far as pneumonia in the Army is concerned.

1. Primary Pneumonia: Pneumonia developing without relation to any coexisting disease, except that pneumonia developing in association with "common respiratory diseases." Examples: Pneumonia due to bacteria such as pneumococci, Friedlander's bacilli, staphylococci, and hemolytic streptococci. Additional example: Primary atypical pneumonia (so-called virus pneumonia).

2. Secondary Pneumonia: Pneumonia occurring in the course of other disease where it is a usual or frequent complication. Example: Pneumonia occurring in pertussis, measles, psittacosis, and tularemia.

In the Seventh Service Command, pneumonia due to rare causes, as psittacosis, brucellosis, tularemia and rickettsia, has not been observed recently as far as we have been informed. To our knowledge there has been one case of pneumonia due to coccidiomycosis, and a few due to Friedlander's bacilli, staphylococci and hemolytic streptococci.

The terms "influenza" and "infuenza pneumonia" have been confusing. Influenza must now be considered a specific disease caused by influenzal virus B.¹ It is predominantly a highly contagious disease of the respiratory tract with characteristic symptoms consisting of acute onset, generalized aching and hyperesthesia and usually associated with severe headache and marked prostration. Catarrhal symptoms are not marked; however, there is marked injection of the conjunctivae and nasopharynx, and leukopenia is characteristically present. The diagnosis can be made by isolating the virus by inoculation of ferrets, mice and eggs; and a diagnosis can be made in retrospect by the increase of the complement fixation titer for influenza antigen.

Strictly speaking, "influenzal pneumonia" is the pneumonia caused only by the viruses of influenza, a true viral pneumonia. In the 1918-19 epidemic, the influenza virus prepared the field for the invasion of the lungs by pneumococci, streptococci, staphylococci and Pfeiffer's bacilli (erroneously called "influenzal bacilli"). Fortunately, there has been no epidemic of influenzal pneumonia this year such as that which killed 19,249 of our Armed forces in the last war.³ A few questionable isolated cases have been observed. Reimann believes that "influenzal pneumonia" will not occur this year because there is no evidence that viruses of influenza are widespread.¹

This presentation is concerned chiefly with two pneumonias—that due to the pneumococcus and that presumably owing to a virus, the primary atypical pneumonia.

PNEUMOCOCCUS PNEUMONIA

All of you are familiar with classical pneumococcus pneumonia, the commonly designated lobar pneumonia. The subject with this kind of pneumonia is suddenly seized with a chill, with or without a previous history of a "cold". There are usually severe pleuritic pain, high fever, rusty sputum and findings on clinical examination which are easily interpreted. The number of white cells in the blood is greatly increased, there is polymorphonuclear leukocytosis and pneumococci can be recovered from the sputum. Roentgen examination shows dense, homogenous opacity which is frequently lobar in distribution. Response to adequate therapy with sulfathiazole or sulfadiazine is prompt. The body temperature becomes normal in about 48 hours if treatment is begun promptly. Roentgen signs usually disappear promptly. Such is the record reported in the following:

A soldier was admitted to the hospital the night of December 9, 1942. He had been well until approximately noon on December 9, as he had spent the morning on the obstacle course, and stated that he was able to do anything that he had been able to do previously. After lunch he began having fever and chills, with general body

aching. There were a few moist rales in the upper lobe on physical examination, and his temperature was 104.8. The white blood cells numbered 26,350, and examination of the sputum showed type 7 pneumococcus. X-ray of the chest made December 11 showed dense, uniform consolidation of the right upper lobe (fig. 1). The patient was

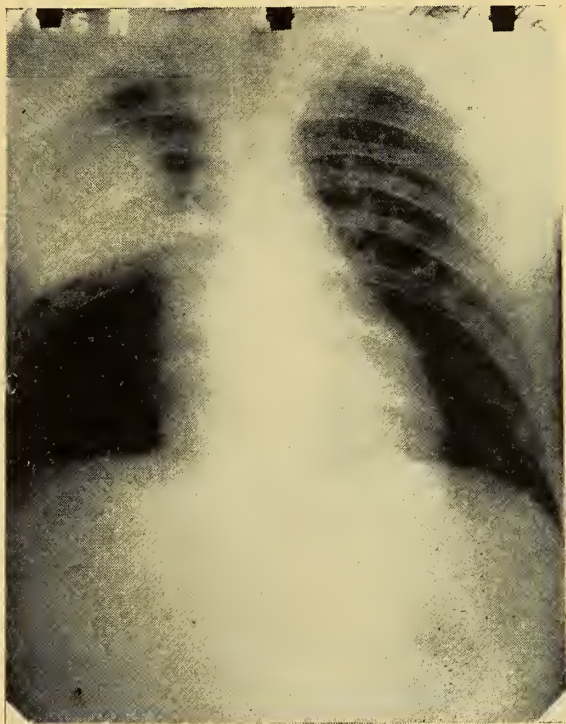


Fig. 1. Primary pneumonia, (pneumococcus type 7) right upper lobe.

given 2 grams of sulfathiazole and 1 gram of sulfadiazine every four hours. His temperature decreased to normal in 48 hours, and he made an uneventful recovery. X-ray films December 27 showed complete clearing of pneumonia and the lung fields entirely negative.

An instance of typical pneumococcus pneumonia is presented in the following. A soldier was admitted to the hospital because of cough and pain in the left chest of two to three days' duration. He was dyspneic but not acutely ill. Leukocytes numbered 13,200 and temperature was 102.2. Roentgen examination showed "infiltration in the left lower lobe with consolidation",

considered to be "lobar" pneumonia (fig. 2). Examination of the sputum showed type 7 pneumococci. Treatment with sulfathiazole was begun. His temperature became normal within 48 hours. Roentgen examination made four and eight days after the first one showed no change. Roentgen examination four days later showed beginning resolution and roentgen examination made 26 days after admission of the patient to the hospital showed slight fibrosis and pleural thickening.



Fig. 2. Infiltration left lower lobe has roentgenologic characteristics of lobar type of pneumonia. Clinically this was a case of atypical pneumococcus pneumonia.

The diagnosis of pneumococcus pneumonia in this case may be questioned because of lack of acute onset, lack of marked leukocytosis and of high fever. However, type 7 pneumococci were found in the sputum, and since this type accounts for about 8 per cent of pneumococcus pneumonias, it should probably be considered pathogenic. Moreover, the x-ray films indicated "lobar" pneumonia to one experienced roentgenol-

ogist and response to sulfathiazole was prompt.

A qualified roentgenologist cannot always differentiate various kinds of pneumonia. Pneumococcus pneumonia may occasionally appear like virus pneumonia to him. The clinician cannot always reliably differentiate pneumococcus from virus pneumonia. In cases in which clinical history, physical findings, laboratory studies and roentgen survey fit closely into a pattern, there is no difficulty; but when one or more than one of these are discordant, the physician must remain uncertain. Many such cases have been observed in the Army. In such cases as these it has been impossible to classify pneumonia in a satisfactory manner.

The mortality from pneumococcus pneumonia has been very low in the Army. There have been only three deaths in 1,488 cases of pneumonia in three large station hospitals. All of these deaths were attributable to staphylococcus pneumonia. About one-third to one-half of the survivors had pneumococcus pneumonia. That is, roughly about 500-700 cases of pneumococcus pneumonia without a death. Of course, there are factors other than good medical care which are responsible for the remarkable recovery rate. Pneumonia is relatively mild in nature this year, the subjects are usually young adults who were previously well; and treatment is begun early, for soldiers are usually well enough for duty or they are admitted to the hospital.

PRIMARY ATYPICAL PNEUMONIA

This is a term applied to pneumonia which is primary and not bacterial in origin. It is commonly called virus pneumonia.

History: There has been a tendency to consider that this type of pneumonia has newly arrived upon the scene. It has definitely been known for seven years.^{4, 5, 6} However, it was rare before 1938. Reimann believes it is not a new disease, but one which has been delineated from a large heterogenous group of pneumonias.¹ No one seems certain how long it has existed.

The recent increase in reported incidence of it seems owing to recognition of it as an entity and an actual increase in the incidence of it which represents a fluctuation in incidence common to many contagious diseases. The epidemic has probably reached its maximum at the present time.¹

Etiology: The etiology of this type of pneumonia is unknown but it is probably caused by a virus. There is both indirect and direct evidence that this is true. The indirect evidence consists of: (1) contagiousness; (2) absence of bacterial cause; (3) failure to respond to therapy with sulfonamides. Direct evidence is furnished by search for virus. These studies are as yet inconclusive but highly suggestive. Viruses have been isolated from subjects with "atypical" pneumonia, which resemble the viruses of meningo-pneumonitis, psittacosis and lymphogranuloma venereum. A respiratory tract infection in cats has been shown to be due to a virus and a number of cases of humans who developed atypical pneumonia after contact with sick cats, have been reported. The virus seems to be the same or similar to that causing virus pneumonia of humans.⁷ Material from such cases of human pneumonia, which is presumably a filtrable virus, produces pneumonia in rats. The studies suggest but do not prove that there is a causal relation between this agent and the most common form of "atypical pneumonia."⁸ Additional studies suggest that it is closely related to the viruses which cause other diseases, as influenza, psittacosis, meningopneumonitis, lymphogranuloma inguinale and lymphocytic choriomeningitis.⁹ Reimann and associates conclude their survey of the etiology of virus pneumonia with the following:

"From the facts at hand the adoption of the term "virus" pneumonia is justified, but only to indicate a syndrome composed of a group of entities, each caused by a specific filtrable virus, as for example, that of psittacosis and related infections, of influenza, of chickenpox, smallpox or of lymphocytic choriomeningitis or perhaps the mongoose-infecting virus. Furthermore, certain agents other than viruses, like the

Rickettsia of "Q" fever, the protozoan *Toxoplasma* and the fungus *Coccidioides immitis*, may also cause disease resembling the pneumonias caused by viruses. And lastly there is a large group of atypical pneumonias of which the cause is still unknown. Therefore, etiologic studies should be made in all cases of pneumonia, including the special serologic tests for lymphocytic choriomeningitis and for disease caused by the psittacine group of viruses, and the disease named according to its etiologic agent whenever possible."

Clinical Manifestations: According to Dingle and associates, and in our own experience, atypical pneumonia is usually a disease syndrome characterized by gradual onset, mild or moderately severe illness in which constitutional symptoms predominate over respiratory symptoms in the early stages. Headache, fever, malaise and chilliness are observed in approximately 80 per cent of the patients. A dry and paroxysmal cough is present early in the disease, and is productive of non-bloody sputum at the time of admission in about two-thirds of the patients. Chest pain is more frequently substernal than pleural. Coryza, sore throat and gastrointestinal symptoms are less commonly observed. Variants from these clinical manifestations are common.

Prostration is rarely observed. The fever is intermittent in type, rarely sustained and usually persists for two to six days in the majority of the patients. The pulse and respiratory rates are relatively low. Signs of involvement of the upper respiratory passages may be noted in a small percentage of the cases. Relatively few abnormal signs in the lungs are detected in proportion to the degree of pulmonary involvement shown radiographically. The most characteristic sign is the subcrepitant "sticky" rale best elicited after coughing and deep breathing. Rhonchi may be detected in approximately 40 per cent of patients. Changes in percussion and breath sounds are rarely observed.

The roentgenographic lesion in many patients is characteristic. The early lesion is usually at the hilus and is observed to

spread in a wedge or fan-shape to the periphery of the lung. Spread may occur within a lobe or to an adjoining lobe. A common site of the lesion may be the cardiophrenic angle. The infiltration is usually soft and either patchy or homogeneous. Rarely is the shadow as dense as that observed in pneumococcus pneumonia. Diffuse seeding of such an extent as to resemble miliary tuberculosis has been noted occasionally. Resolution of the pulmonary shadow commonly occurs within a few days. Experience has taught that there are no "characteristic" roentgen evidences of "virus" pneumonia or of bacterial pneumonia. An abnormal accumulation of pleural fluid is rarely noted. The distribution of the pulmonary lesions shown radiographically resembles that found in pneumococcal pneumonia, namely, the more frequent involvement of the lower lobes.

The clinical course of atypical pneumonia may vary considerably. Although mild infections are most frequently observed, severe infections may be noted. In addition, some patients may have roentgenographic evidence of pneumonia without clinical evidence of the disease. The duration of acute illness of atypical pneumonia may vary between two days and 45 days. The white blood cell count in atypical pneumonia, both during the febrile and afebrile periods, varies between 6,000 and 10,000 in the majority of patients. Differential counts likewise show no significant abnormalities. Bacteriologic examination of specimens of sputum, throat and blood have thus far shown no organism which, by reason of its occurrence or predominance, can be considered to be a specific etiologic agent.

Complications occurring during the course of atypical pneumonia are infrequent. The prognosis is excellent. The disease is rarely serious, but death may result from the disease itself, from secondary bacterial invasion or from the infection superimposed upon pre-existing organic disease.

Differential Diagnosis: Characteristic instances of virus pneumonia need not be

confused with other conditions, particularly when there are epidemics. One need always think of tularemia, psittacosis, meningopneumonitis, and brucellosis. The bacterial pneumonias may closely simulate virus pneumonias; we have observed instances of atypical pneumococcus pneumonia which closely resembled virus pneumonia as to onset, fever, roentgen manifestations and number of leukocytes in the blood. However, pneumococci considered pathogenic were found in the sputum and the disease responded promptly to sulfathiazole. In many cases it is impossible to make an exact diagnosis based on etiology. This statement necessitates discussion of when and why not to use one of the sulfonamides. Some medical officers urge the use of sulfathiazole or sulfadiazine for 48 hours at least in every case of pneumonia. Others disagree heartily. In the Army, some medical officers follow one plan, some follow another. If the clinical history and physical findings are characteristic of virus pneumonia in a specific case, and if the patient is not seriously ill, it is justifiable to withhold chemotherapy until studies of sputum and roentgen examination confirm or deny the diagnosis. When doubt exists or when laboratory and roentgen facilities are not available, a patient with pneumonia should be treated with sulfathiazole or sulfadiazine in our estimation. Treatment should be continued until the efficacy or lack of efficacy of such treatment has been established. Certainly, a patient who is admitted to a hospital seriously ill with pneumonia should not be denied the possible benefit of drugs, until cautious study can be made to determine whether or not he has virus pneumonia. The same policy is advisable here as that followed in frank pneumococcus pneumonia. The alert physician waits neither for reports on sputum nor the results of roentgen examination. He treats the patient first and gets the reports later.

Treatment: In most cases no specific treatment is necessary. Irrigation of the throat, inhalation of medicated steam, instillations into the nose of ephedrine or re-

lated compounds, and use of expectorants or drugs to control cough may relieve symptoms for which they are prescribed. Contrary to common opinion it has been our observation that "sulfa" drugs seem to cause reduction of fever occasionally. Unfortunately one cannot determine whether or not fever would not have decreased without specific treatment. Inhalation of oxygen should be used when significant cyanosis occurs. Some seriously ill individuals improve in a dramatic manner following the intravenous injection of blood plasma.

Incidence: This is a very common type of pneumonia in the Army; and usually comprises 50 to 80 per cent of all the pneumonia.

Mortality: According to information which we have, no deaths have occurred from virus pneumonia in the Seventh Service Command.

ILLUSTRATIVE CASES

CASE No. 1

A soldier was admitted to the station hospital because of sore throat, pain in an ear, fever, blood streaked sputum and generalized weakness. His temperature was 101.6° and leukocytes numbered 7500. Roentgen examination showed evidence of two small areas of infiltration in the right upper and middle lobes. Sulfathiazole was given beginning two hours after admission, when the temperature was 103° F. The temperature was normal within 48 hours. Roentgen examination seven days after examination was negative.

Comment: This is a characteristic example of mild virus pneumonia. One cannot attribute the sharp disappearance of fever to the use of sulfathiazole, for fever frequently disappears as rapidly without chemotherapy. Nonetheless, the disappearance of fever occurs so commonly during treatment with sulfathiazole that one cannot deny entirely an effect of the drug.

CASE No. 2

A patient was admitted to the hospital because of generalized aching, chills, and cough. Physical examination disclosed suppression of breath sounds and rales at the right base. The temperature was 101.4° F., the leukocytes numbered 11,400 and pneumococci could not be found in the sputum. Roentgen examination showed infiltration in the right cardio-phrenic angle. The temperature be-

came normal on the third hospital day. Roentgen examination four days after admission was negative.

Comment: This is likewise a characteristic example of mild virus pneumonia. Recovery occurred as quickly in this case as it did in the previous case in which chemotherapy was used. This emphasizes the need for caution in interpreting results of treatment of pneumonia with drugs.

CASE No. 3

A soldier was admitted to the hospital because of a cold he had had for two weeks. His temperature was 102.6° . A few fine rales were found at the right base on physical examination. Roentgen examination showed patchy involvement of the right lower lobe. His temperature became normal in four days without specific treatment and roentgen examination six days after admission was negative.

Comment: This is likewise a characteristic example of mild virus pneumonia. The recovery without chemotherapy is characteristic.

CASE No. 4

A patient was admitted to the hospital because of a cold and generalized aching and fever of 101.4° . The leukocytes numbered 15,800. Roentgen examination showed pneumonia of the right middle lobe (fig. 3). No pneumococci could be re-

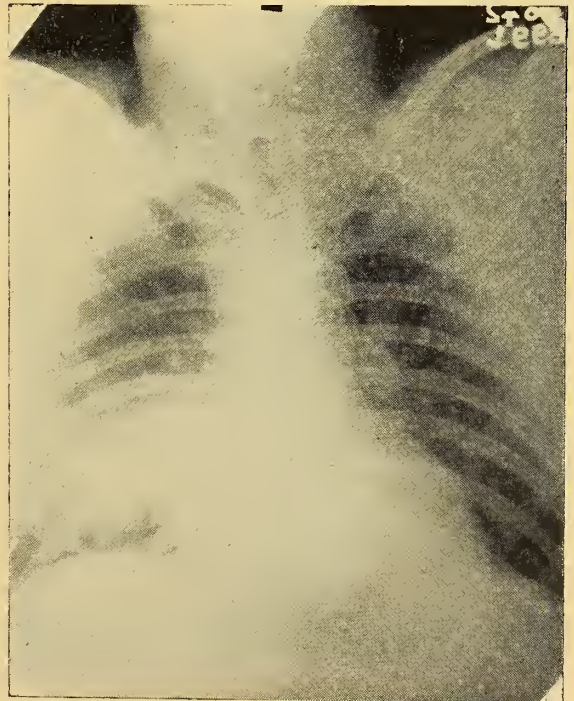


Fig. 3. Primary atypical pneumonia right middle lobe resembling lobar type roentgenologically.

covered from the sputum. The patient's temperature became normal on the fifth day. Roentgen examination ten days after admission was negative.

Comment: This is a characteristic example of primary atypical pneumonia, except that the leucocyte count was high.

CASE No. 5

A soldier was admitted to the hospital because of a "cold" of four days' duration. His temperature on admission was 101.2° and roentgen examination showed infiltration and consolidation involving the left lower lobe. Pneumococci could not be found in the sputum. Treatment with sulfathiazole was begun and the temperature became normal on the third day. On the fifth day the patient had a chill and sulfadiazine was substituted for sulfathiazole. Roentgen examination showed the pneumonia in the left lower lobe had cleared but that there was infiltration in the left upper lobe. The temperature became normal in 48 hours. Roentgen examination 22 days after the chill was normal.

Comment: This is a good example of pneumonia occasionally designated by the adjective "migratory" because it disappears in a part of a lung and simultaneously occurs in another part. This is not an uncommon variety of "virus" pneumonia. It is worthy of comment that involvement of the upper lobe occurred during the treatment with sulfathiazole; conclusive evidence of ineffectiveness in this particular case.

SUMMARY

We have observed cases of diffuse involvement of both lungs with patchy pneumonitis. Such cases are fortunately rare; the patients are almost always seriously ill with fever, dyspnea, cyanosis and prostration. On auscultation, one hears rhonchi not unlike those heard in chronic asthmatic bronchitis and finer rales. Also we have observed cases showing persistence of roentgen findings in the lungs which have persisted essentially unchanged for several weeks after the patients have recovered.

REFERENCES

1. Reimann, Hobart A.: Personal communication.
2. Reimann, Hobart A.: *The Pneumonias*, W. B. Saunders Co., Philadelphia, 1938.
3. Norris, George W., and Landis, H. R. M.: *Diseases of the Chest and the Principles of Physical Diagnosis*, W. B. Saunders Co., Philadelphia, 1940.

4. Reimann, Hobart A., and Havens, W. Paul, and Price, A. H.: Etiology of atypical "virus" pneumonias with a brief resume of recent discoveries, *Arch. Int. Med.*, 70: 513, 1942.

5. Primary atypical pneumonia; etiology unknown, *The Army Medical Bulletin*, 61:31, 1942.

6. Duggan, L. R., and Powers, W. L.: Respiratory infection resembling so-called acute meningitis, *J. Lab. & Clin. Med.*, 28:524, 1943.

7. Baker, James A.: A virus obtained from a pneumonia of cats and its possible relation to the cause of atypical pneumonia in man, *Science*, 96:475, 1942.

8. Eaton, M. D., Meikeljohn, Gordon, Van Herick, W. M., and Talbot, J. C.: An infectious agent from cases of atypical pneumonia apparently transmitted to cotton rats, *Science*, 96:518, 1942.

9. Beck, Dorothy, and Eaton, Monroe D.: Identification of two strains of virus isolated from cases of atypical pneumonia, *J. Infect. Dis.*, 71:97, 1942.

10. Dingle, John H., Abernathy, Theodore J., Badger, George F., Buddingh, G. John, Feller, A. E., Langmeier, Alexander D., Rueggsegger, James M., and Wood, W. Barry, Primary atypical pneumonia, etiology unknown, *War Med.*, 3:223, 1943.

SYLVATIC PLAGUE*

PROBABLE ORIGIN IN THE UNITED STATES, DISTRIBUTION, POTENTIALITIES AS A RESERVOIR FOR INFECTIONS IN MAN

SAM A. TRUFANT, III, M. D.
NEW ORLEANS

INTRODUCTION AND HISTORICAL REVIEW

In 1894 an epidemic occurred which brought Kitasato and Yersin from the laboratories of Koch and Pasteur halfway round the globe to study it; plague was in Hong Kong. Independently they isolated and described *Pasteurella pestis* as the guilty organism, but the infection was on its way around the world. In its spread to the Western world it arrived in Hawaii in 1899 and on March 6, 1900, in the Chinese quarter of San Francisco the diagnosis was proved by bacteriological and cultural examination of a dead Chinese. By the end of December, 21 more patients were dead of plague in San Francisco.

The Governor refused to admit the possibility. The newspapers and business interests denied it as impossible—but *P. pestis* went its merry way and it was not until mid-February 1901 that the Governor turned the matter over to the U. S. Marine Hospital Service (now the United States Public Health Service). Despite this, in

*Thesis awarded Walter Reed Memorial Prize of the Louisiana State Medical Society, 1943.

1901 of 30 cases reported 25 died. City, State and Federal officials viewed with alarm and redoubled their efforts to stop the epidemic. Rat proofing, rat poisoning, fumigation of buildings and ships, house to house canvasses to assure adequate safeguarding against the disease were carried on. Sermons were preached. Bounties were paid for rat corpses and rat eradication was taught in the schools. But in 1902, 38 cases were reported in San Francisco, one each across the bay in Oakland and Berkeley and one in Davisville, 41, all fatal. Plague had spread beyond San Francisco.

In 1903 only San Francisco was victimized with 17 cases, and in 1904 only 10. But all in all 120 cases from 1900 to 1904 had cost 114 lives. San Francisco had a breathing spell with no cases in 1905 and 1906. Vigilance was relaxed and in 1906 it was not surprising that, following the earthquake, even less attention was paid the problem. Neglect, however, as always, collected its due in 1907 in the form of 178 cases with 87 deaths, 16 of which were in Oakland and one each in Berkeley and Pt. Richmond. Three cases were also reported in Seattle with three deaths. A second major focus had been set up. But another "epidemic" had meantime taken place. In 1903 great numbers of ground squirrels were reported to have died in the area around San Francisco Bay. It was in 1903 while investigating the origin of a fatal case of plague in a blacksmith in Contra Costa County on the East side of San Francisco Bay that Rupert Blue became impressed with the possibility, that ground squirrels might be infected. The patient had shot ground squirrels three or four days before the onset of illness. One month later bubonic plague was proved in a railroad man who had stayed at a construction camp where ground squirrels were killed and eaten. Early in 1904 another fatal plague infection was recognized in another sector of the county and Meyer refers to a case in 1906, a boy who had shot ground squirrels in Strawberry Canyon on the grounds of the University of California, sickened with typical bubonic plague (though this case

seemed real no cases are listed in the U. S. P. H. S. Reports for 1906). Inquiries made by Long and Wherry disclosed that in Contra Costa County between 1933 and 1905 the ground or "digger" squirrel (*Citellus beecheyi*) had been decimated in various localities by sickness and deaths. Despite every inducement, it was impossible to secure a sick or dead animal. However, Currie had in 1904 ascertained the susceptibility of the ground squirrel to plague infection by inoculation and direct contact. But not until 1908 when, following the recognition of two fatal rural plague cases (a boy at Concord and a man at Briones Valley), a special trapping crew under Long collected 423 ground squirrels on a ranch outside Concord, was proof obtained that the cause of the mass mortality was *P. pestis*. Finally in 1909, McCoy and Wherry performed the first postmortem on a boy who had been out squirrel hunting five days prior to his becoming ill. While on this shooting trip he had shot four or five squirrels which he had brought home with him (it was subsequently proved that there were plague infected ground squirrels in the immediate vicinity of where the boy had been hunting). There was no evidence that he had been in any place where he might have become infected with plague except on this hunting trip. The autopsy proved plague as the cause of death and at the same time proved that plague in man could be transmitted from the ground squirrels. Sylvatic plague was established.

It might be interesting to note here the origin of the term "sylvatic plague." Jorge proposed the term "peste selvatique" in 1928. Until 1934 it was referred to as such in English, but subsequent etymologic studies showed that sylvatic means running or growing wild in reference to animals and the spelling sylvatic was adopted. Some men feel that the term should be discarded since it tends to create a false sense of security.

ORIGIN IN THE UNITED STATES

Once that its existence was proved the question naturally arose, "From whence did it come?"

For many years it seemed certain the origin of the disease was from rats which were transported to San Francisco on ships (and indeed it is still undoubted that plague came to various places by ship), but extensive and careful epidemiologic studies were not made for a great many years and only recently has the evidence been critically reviewed and doubt as to this method of origin arisen. Meyer has recently raised the question as to the possibility of plague being indigenous in the Western world rodents as it is in their Asiatic cousins and possibly their South African cousins in much the same way that yellow fever is indigenous in South America and Central Africa.

THE "IMPORTATION" THEORY

By virtue of its seniority the importation theory of the origin will be discussed first. At first glance it seems obvious that ships arriving at San Francisco from Hong Kong carrying infected rats requires little further study as the origin of plague in the United States; quite probably this was the way in which the human cases arose. Furthermore factors influential in directing plague toward the United States and then aiding in its maintenance merit attention. These factors are: (1) the arrival and spread of the rat in the United States; (2) the presence in San Francisco and other cities of conditions suitable for rat propagation; (3) the presence of infected rats; (4) the maintenance of the reservoir of infected rats; (5) commerce and shipping with rat-infested and plague infected ports; (6) the destruction of the rats' natural enemies; (7) the human toleration of the rat; (8) the spread of plague to other rodents and the maintenance of the reservoir in other rodents; and (9) popular misconceptions.

Rats have long been known as a repository for plague and due to their widespread distribution their arrival and spread in the United States is of importance. Chronologically, at least, the rat was the first affected rodent. Infection of other rodents followed. Furthermore, it would seem that had San Francisco been rat free in 1900 it would have at least hampered the develop-

ment of human cases. Boelter tells us that the brown rat first came to this country in 1735 on English ships to the eastern seaboard, and in 1740 to New Orleans. He believes also that they did not move rapidly westward until 1825 when they had reached Missouri, but in 1880 they were in San Francisco. However, it would seem that his dates are guesses and that with the gold rush of 1849 rats must have come to San Francisco on ships along with the hordes of men.

Whatever the origin, San Francisco had rats in 1900 and what is more, conditions for the propagation of rats were present as everywhere. The buildings were wooden and few were ratproofed. Even sidewalks were of board in many areas. Also San Francisco was a seaport, the sewage was hardly modern and garbage disposal was none too vigorous. That there were infected rats in San Francisco before human cases is now generally accepted, though the rat infection was not proved until 1902.

After the reservoir in rats was established it was easy to maintain for two reasons: (1) the close association of rat with rat in crowded burrows thus allowing ready interchange of fleas from rat to rat, and (2) rats have a habit of being inaccessible if they wish to be. These factors make for great difficulty in stamping out the infection. What with the vigor the search for infected rats relaxed in 1905 and 1906 due to the absence of human morbidity, failure to find such rats does not prove that there were none or that the epidemic of 1907 and 1908 was from the outside. To say that San Francisco was not in commercial and shipping touch with rat-infested and plague-infected ports is fantastic on its face, for plague was widespread in the ports of the world. No port is entirely rat-free and in 1900 it is hardly conceivable that rigid measures were taken to prevent rats from boarding a ship in one port and leaving it in another. Furthermore, even with restrictions on shipping from plague infected ports one need not rule out the possibility of such ports or rather their rats, transmitting the infection. Prime example

is that it was over a year before San Francisco was admitted to be plague infected and meantime its rats spread to the ports of the world.

At least in so far as rat-borne disease was concerned, an unfortunate incident was the destruction of the rats' natural enemies by farmers especially—snakes, owls, foxes, hawks and many others. This permitted, among other things, the spread of the rat from urban centers to the country regions where the wild rodents abound.

No less important is the fact that man tolerates the rat. Of course until the beginning of the 20th century little or nothing was known of the role of the rat in Public Health, so that one can better understand its being tolerated. Since its relation to disease has been appreciated, the number of diseases in which it has proved to play a role is indeed staggering. Yet with this knowledge at hand only little concerted and vigorous effort has been spent in exterminating this harbinger of disease, and the rat continues its more or less peaceful and prosaic existence. And in this prosaic existence, with many of its natural enemies removed from its sphere by man, the rat ventures into the wooded areas and finds the burrows of its cousins—the ground squirrel (not to mention the other species of rodents that are now known to harbor the infection) with whom he exchanges fleas, and we have wild rodent plague. The size of this reservoir is incalculable, not only as regards plague but as regards the other rodent borne infections of man.

Furthermore, this vast reservoir of wild rodents once set up is literally self-perpetuating, and if rat plague was difficult to stamp out in San Francisco alone, the business of getting rid of the infection in wild rodents of the forests and plains is well nigh insurmountable. It is hardly to be expected that such a reservoir will pass naturally out of existence, for plague is believed to have originated in outer Mongolia centuries ago in wild rodents and it is still there.

Adding to the ease of the spread and maintenance are several thoroughly disproved but popular misconceptions. Plague is believed by the laity to be a disease of filth—this is true only in so far as filth provides food and shelter for rats and rat fleas, personal cleanliness alone is no prophylactic. That plague is a disease of Orientals since it is in the Orient that it has been going on for years—but only in Chinatown was there no plague in 1907-1908 for it has been "built-out", plague is no respecter of age, sex, or race. Neither is plague confined to seaports or tropics—it is only that these areas with their wooden wharves and buildings provide a more favorable environment for the rats.

ENZOOTIC THEORY

The above evidence would seem ample to support the contention that plague was imported into the United States by ships and that it then spread to wild rodents. Nevertheless, Meyer particularly, questions that belief and propounds the idea that perhaps plague infection is enzootic in the Western United States, as it is in Asia and probably the steppes of Russia and in South Africa. There are several questions of vast importance which the importation theory fails to answer adequately. These questions have largely to do with ecology of plague. Unfortunately, it is only in the past few years that extensive studies on the problem have been carried out in this country, though the ground for such work was broken by ecological investigations of McCoy, Wherry, Blue and others at the time of the first outbreaks. There have been, however, many studies on the problem in other countries.

ECOLOGICAL "FACTS"

Since this problem deals largely with the ecology of sylvatic plague it is proper that we should set forth just what facts are definitely known and then consider the evidence bearing on the missing information.

It is known that plague in wild rodents exists in twelve of the western states, at least, and that this extends inland for over 1200 miles, beyond the Great Divide into North Dakota, Wyoming and New Mexico.

Localized epizootics among wild rodents occur and occur usually in the early spring. Despite "control" measures these epizootics continue with a cyclic mortality for periods of over three years. What is perhaps even more important is that these epizootics occur in the same site from time to time. These facts have been extensively studied on the J. D. Ranch near Hollister, California, where in 1910 an infected squirrel was shot, but no systematic search was made for plague until 1928 and 1929 when a visible rodent mortality was proved to be due to *P. pestis*, and although suppressive measures were continuously carried out infected fleas were still present in 1938. There are several other reports of a similar nature in the Public Health Reports. Fourie states that similar periodic epizootics are seen in South Africa, and they are also seen in southeastern Russia. Meyer and Eddie finally proved, in view of this periodicity, the persistence of rodent plague in a focus once set up, when they found that the same burrows that were known to have been infected in 1916 to be infected in 1936.

We also know that a vector is substantially indispensable to complete the propagation of plague among wild rodents. This was established as early as 1910 by McCoy in this country for the ground squirrel, the vector being the flea (*Dipodomys montanus*). This flea not only harbored *P. pestis* but also conveyed it from squirrel to squirrel. This work has been duplicated many times for over 13 species of flea in North America by Eskey and Haas, and by others in Russia and South Africa. These fleas are known to be capable of transmission of the infection after several months of "storage" and starvation. Very low temperature seems to increase the period of infectivity.

So far spontaneous infections or reservoirs of plague have been established in over 31 rodents and in rabbits, the former including ground squirrels, marmots, chipmunks, wood rats, kangaroo rats and prairie dogs. Other rodents have been found naturally infected in Russia, Mongolia and South Africa.

It is known that the plague bacilli responsible for these epizootics are biologically identical with those causing plague in rats and man both in the United States and other parts of the world. Recently however, Kurauchi has divided plague organisms into two groups, Alpha (non-glycerin-fermenting) and Beta (glycerin-fermenting). The latter are endemic in the islands and peninsulas and the tropics (India, Ceylon, Japan, Java) while the former are endemic in the Asiatic plateau, Mongolia, and Manchuria. He contends that since the California organisms are Beta as were those in Hong Kong in 1894 that the enzootic race in North America is descended from them. Unfortunately, the organisms east of the Rocky Mountains have not yet been so studied and also the organisms of South African plague, which is believed to have originated in Hong Kong, are of the Alpha group. Further studies are needed to give weight to this evidence for the origin of sylvatic plague in the United States.

The one final thing from an epidemiologic point that is known is that sylvatic plague can be transmitted from wild rodents to man. There is ample evidence for this in the U. S. P. H. S. Reports and in writings of McCoy and Meyer. The disease differs in no way from that transmitted by rats and the anatomical lesions are similar.

It may seem to the reader that I have gone astray, but only by considering what is known of the ecology of sylvatic plague can we appreciate the gaps in our knowledge that will have been opened by a careful perusal of foregoing paragraphs.

UNSOLVED PROBLEMS

Since most of the above facts could be explained by the importation theory of origin it is well to consider other questions. Meyer mentions a report by S. S. Wilson of an epizootic among Townsend squirrels in Washington in 1896, an area now proved to be plague infected. Also he states that old residents of California had noted rodent epizootics many years before the San Francisco epidemic and states that they would not handle the victims of these

epizootics. It would seem that some consideration must be given these facts involving the problems of the mechanism of spread and perpetuation.

SPREAD

Inquiries into the mechanism of the spread of plague to inland United States are of recent date and they tend to cast doubt on the importation theory. For after all, plague is many hundred miles from its point of "origin" and the epizootics of the past few years have occurred in widely scattered areas. In the solution of this problem studies on the flea are of most importance and are not yet complete. Only recently Jellison and Wheeler have shown that the same fleas that carry plague are found on the burrowing owls that share the colonies of the ground squirrels. To date it would seem, however, that the main spread is by contiguity as there is no evidence for spectacular migrations and studies on the life habits of the ground squirrels by Evans and Holdenried show that the squirrel population moves very slowly from its birthplace. The studies by Jellison in this country and Ergorov in Russia show that the disease bearing cadavers and fleas may be transmitted by predatory birds for considerable distances, however, the evidence is as yet incomplete and further studies are required to determine the efficiency of such transmission. Finally, it is suggested that infected rodents may be transported by railroads though no studies have been specifically made. The question therefore resolves itself as to whether or not the natural transmission of the organism could cover 1200 or more miles over mountains in 40 years. Until further ecological studies are carried out the question is unanswered. These studies must include not only fleas, rodents, and scavengers, but the effects of climate and atmospheric conditions on *P. pestis*.

PERPETUATION

It is known that plague, once established in a wild rodent population persists but what the mechanism is has not yet been demonstrated. There are certain experi-

mental data from work done originally in Russia and South Africa, much of which lately has been confirmed in the United States. This work shows that dead carcasses are soon removed by predators and even if not removed are infective for only a short time even though they die in burrows (death in burrows is not usual so that the carcasses are rapidly removed by predators). In frozen cadavers the infectivity may last up to six months but little of the area of plague in this country experiences frozen ground. Though Eskey has shown that dried feces may be infective for five weeks there is no evidence to show that rodents become infected by this means. In so far as California is concerned, Meyer contends the squirrels of the lowlands preserve the infection by subacute cases in young adults. In the lowlands hibernation is not an important factor. However, in certain areas hibernation is of importance as the rodents may hibernate for as much as seven months. Since there is no satisfactory evidence that the soil of the burrows is infective, experimental investigations have suggested two other possibilities: (1) a latent form that persists during hibernation, and (2) that fleas may remain infective for long periods. The latent plague in rodents is not a chronic form but rather appears to be a variety of *P. pestis* infections without marked or characteristic anatomic lesions and associated with organisms of low virulence. This latent form is reactivated, but the adequate stimulus for reactivation is as yet unknown. Malnutrition, gestation and environmental factors have been suggested. There is little evidence to support this concept, though the studies are meager. As to the second idea, that fleas carry over the infection from season to season the evidence is more convincing. Experimentally, infected fleas have been found to be infective, after starvation and freezing for periods up to five months (Eskey and Haas). However the work in the laboratory has not yet been checked in the field and, until such a time as it is so checked, remains speculation as to its role in perpetuation of the infection. The ob-

servations of Pirie in South Africa showed that: (a) in the absence of fleas, plague was not persistent in gerbille burrows for even one month, but (b) with fleas present it persisted up to four months. These experi-

ments have yet to be checked in the United States.

Brief consideration must be given to the possibility that non-hibernating rodents such as mice and rabbits may carry *P.*

TABLE 1
DISTRIBUTION BY STATES SHOWING INFECTED RODENTS AND ARTHROPODS

State	Rodent (date first found)	Arthropod (date first found)
Arizona		Fleas from prairie dogs (1938)
California	Rat (1900) Ground squirrels (1908) Wood rat (1909) Field mouse (1935) Chipmunk (1936) Flying squirrels (1937) Rabbit (1942)	Fleas from ground squirrels (1936) Fleas from chipmunks (1937) Fleas from ground squirrels (1937) Lice from ground squirrels (1937) Ticks from ground squirrels (1937)
Colorado	Ground squirrels (1941) Marmot (1941)	Fleas from marmots (1941)
Florida	Rats (1920)	
Idaho	Ground squirrels (1936)	Fleas from ground squirrels (1930) Tick from ground squirrels (1937) Lice from ground squirrels (1938) Fleas from marmot (1938)
Louisiana	Rats (1912) Mouse (1915)	
Montana	Ground squirrels (1935) Marmots (1936)	Fleas from marmots (1936) Lice from marmots (1936) Fleas from ground squirrels (1938)
Nevada	Ground squirrels (1940)	Fleas from marmot (1936) Fleas from chipmunks (1937) Lice from ground squirrels (1937) Fleas from wood rats (1938)
New Mexico	Prairie dogs (1938) Kangaroo rat (1939) Rock squirrels (1941) White footed mouse (1941)	Fleas from prairie dogs (1938) Fleas from field mice (1938) Fleas from ground squirrels (1938)
North Dakota		Fleas from ground squirrels (1941)
Oregon	Ground squirrels (1935) Marmot (1940)	Fleas from ground squirrels (1937) Lice from ground squirrels (1938) Tick from ground squirrels (1938)
Texas	Rats (1920)	
Utah	Ground squirrels (1936) Marmot (1936) Prairie dogs (1936)	Fleas from marmot (1936) Fleas from prairie dog (1937) Lice from ground squirrels (1937) Fleas from ground squirrels (1937)
Washington	Rats (1907) Ground squirrels (1938) Cotton tail rabbits (1939)	Fleas from ground squirrels (1937) Lice from ground squirrels (1937) Fleas from rabbit (1940) Fleas from rats (1942) Lice from rats (1942)
Wyoming	Ground squirrels (1938) Marmot (1940)	Fleas Lice from ground squirrels (1938) Ticks from ground squirrels (1938) Fleas from prairie dog (1938)

pestis in their organs during the winter even though there is little published evidence as to its value.

I have tried to show by ecologic evidence that, while there are many facts at hand we have little idea as to the mode of production of those facts and that until such are known the problem of the origin of sylvatic plague is largely in the realm of speculation. Certainly the origin is as yet undetermined.

DISTRIBUTION

The factors responsible for the distribution of sylvatic plague have been discussed above and need not be mentioned further. Suffice it to say that infected wild rodents are known to exist in the following states: Washington, Oregon, California, Idaho, Nevada, Colorado, Arizona, New Mexico, Montana, Wyoming, Utah and North Dakota.

Table 1 shows the states in which plague infected rodents and arthropods have been found, and it is interesting to note that in each area wherever found the condition has persisted. The exceptions to this are Louisiana, Florida and Texas where studies have not been extensively followed up in recent years and murine plague only has been observed.

Table 2 shows the species of rodents in the United States known to be infected through 1942.

Table 3 shows fleas known to be of importance in transmission of the infection, *X. cheopis* of rats being proved infective for man. The lice and ticks included have been found to be infected and possibly play a role in maintaining plague in wild rodents.

Table 4 shows human cases reported through 1942 distributed by states.

A comparison of surveyed areas shows that in nearly all instances infected mammals or arthropods have been found. If not in all areas, at least in areas not far distant. Thus it would seem that the unexamined areas should be surveyed as soon as possible.

Considering the present upset domestic conditions due to war it will no doubt be some time before any definite statement can be made concerning the distribution of sylvatic plague. A casual glance at the maps shows some correlation with mountainous

districts (suggestive of the distribution of the other foci in the steppe areas of Russia, Mongolia and South Africa). Nevertheless, this is an important phase of the problem,

TABLE 2*

PLAGUE-INFECTED RODENTS AND LAGOMORPHIA

Order <i>Rodentia</i>	
Family <i>Ciuridae</i>	Family <i>Circetidae</i>
Genus <i>Citellus</i> (ground squirrels)	Genus <i>Urotomas</i> (native wood rat)
beecheyi beecheyi	cinera occidentalis
beecheyi fisheri	fuscipes mohavensis
beldingi oregonus	lepida intermedia
columbian columbianus	lepida lepida
columbian raficandus	
saterals chrysodeirus	Genus <i>Peromyscus</i>
leucerus	truei gilberti
richardsonii elegans	truei truei
richardsonii nevadensis	
richardsonii richardsoni	
variegatus grammurus	
variegatus utah	
washingtoni loringi	
washingtoni washingtoni	
Genus <i>Tamiasciurus</i> (tree squirrels)	
douglasii albolimbatus	
Genus <i>Glaucennys</i> (flying squirrels)	
sabirius lascivious	
Genus <i>Cynomys</i> (Prairie dogs)	
gunnisoni zuniensis	
leucurus	
parvidens	
Genus <i>Entarmias</i> (chipmunk)	
quadrivittatus frater	
Genus <i>Marmota</i> (marmot, woodchuck, ground hog)	
flaviventis engelhardti	
flaviventis nosophora	
Family <i>Muridae</i>	Family <i>Heteomyidae</i>
Genus <i>Rattus</i> (rats)	Genus <i>Dipodmys</i> (kangaroo rat)
norvegicus	ordii ordii
rattus rattus	
rattus dexandimus	
Genus <i>Mus</i> (mouse)	
musculus	
Order <i>Lagomorpha</i>	
Family <i>Leporidae</i> (hares and rabbits)	
Genus <i>Sylvilagus</i>	
nuttalli nuttalli	

*Modified from Zentner

for distribution will have increased bearing on the ultimate methods of control.

TABLE 3*

ARTHIPODS IMPORTANT IN THE TRANSMISSION OF PLAGUE WITH THEIR PRINCIPAL HOSTS IF NATURALLY INFECTED

Subphylum *Insecta*

Order *Aphaniptera* (fleas)

Xenopsylla cheopis (domestic rats)

astia

hos:licensis

Ceratophyllus

acutus (ground squirrels — *Diamanus Montanus*)

fasciatus (*Nonpyllus fasciatus*) — (domestic rats)

anisus (*Monopsyllus anisus*) (chipmunks)

esoquonum (*Suslik*, marmot)

gallinae (birds, occasionally on mice)

Oropsylla silantieri (tarbagan)

Dinopsyllus lypusus (gerbille)

Leptopsylla musculi (rats)

Ctenocephalms argyres

Ctenocephalides canis (cats and dogs)

felis (cats and dogs)

Pulex irritans (human, and dogs, cayotes, skunks)

Order *Anophera* (lice)

Haematopinus columbianus

Linognathoides citelli

Subphylum *Arachnida*

Class *Acarina* (ticks)

Ixoides autumulis

Rhipicephalus schulzei

Argas persicus

Hyalamina volgensis

Dermacentor silvanum

*Modified from Steinhaus and Eskey and Haas.

POTENTIALITIES AS A RESERVOIR FOR INFECTION IN MAN

From a practical standpoint we are obviously interested in knowing what all of this mass of data and speculation means in terms of potentialities for human plague infection. Much of this has already been brought out (that is, it persists in a given locality, it spreads slowly, it can be transmitted to man, role of fleas, and so on) and need not be further discussed. From the charts on distribution it has been shown that sylvatic plague is widespread and found in many different species of rodent. But certain other questions naturally arise: Can it spread from wild rodents to rats and are

rats necessary to cause epidemics in man? What is the virulence for man? What measures can be employed to control this infection in rodents and are they efficacious? These are only a few. For the answers to many of these problems one must rely on the writings of the investigators in those areas, Southeastern Russia, Mongolia, and South Africa, where wild rodent plague has long been known and decide to what extent their findings can be transferred to the United States. Even though in these areas the studies are not entirely conclusive, we can get some idea of the problem from them.

It has long been recognized that the principal rodent involved in the spread of plague to man in epidemic form was the rat. Stallybass tells us, with regard to the relation of sylvatic plague to rat-borne plague, that of the former type two centers have long been known, that of Transbaikial and Mongolia where the large rodent, the tarbagan forms a reservoir, and the other center on the steppes of Southeastern Russia infested by the susliks (*Citellus*) and jerboas. It is from these two centers that most of epidemics which have affected man with such devastation have proceeded, and he (Stallybass) even suggests that the Mongolian center was the site of origin of the Hong Kong epidemic of 1894. These centers have been known to give rise to rat epizootics from time to time, such as the Manchurian epizootic of 1928. In this country there is evidence that sylvatic plague can be spread to rats due to the finding of infected rodents in burrows occupied by both rats and wild rodents.

Thus it would seem quite possible that an epidemic might be started if the rats went into the infected sylvatic regions and returned to the cities with the infection, or, if the reverse occurred, the wild rodents invading urban centers.

That rats are not a necessary intermediary between wild rodents and man has been amply shown above. But, so far only one epidemic definitely seems to have been started and sustained without their aid. That occurred in inner Mongolia in 1928

TABLE 4*

DISTRIBUTION OF HUMAN CASES BY STATES 1900-1942 (incl.)

Year	California	Washington	Louisiana	Florida	Texas	Oregon	Utah	Nevada	Idaho	Total
	C. D.	C. D.	C. D.	C. D.	C. D.	C. D.	C. D.	C. D.	C. D.	C. D.
1900	22-22									22-22
1901	30-26									30-26
1902	41-41									41-41
1903	17-17									17-17
1904	10-8									10-8
1907	178-87	3-3								181-90
1908	8-5									8-5
1909	3-1									3-1
1910	3-1									3-1
1911	4-1									4-1
1913	2-2									2-2
1914	1-0		30-40							41-10
1915	1-1		1-0							2-0
1919	13-13		15-5							28-18
1920	1-1		7-3	10-4	33-19					51-27
1921	3-1		3-3							6-4
1922	2-0									2-0
1923	1-0									1-0
1924	41-34									41-34
1925	1-0									1-0
1927	1-1									1-1
1928	3-2									3-2
1933	1-1									1-1
1934	1-0					1-1				2-1
1936	3-0						1-0			4-0
1937	1-1							1-0		2-1
1939							1-0			1-0
1940									1-0	1-0
1941	2-2									2-2
1942										0-0

C—cases.

D—deaths.

*Modified from Hampton.

where in three months 378 persons died of plague. Kurauchi states that 5000 rats were examined but no sign of plague was found among them and he thinks that the infection was transmitted from man to man, but is of the opinion that the suslik was basically responsible.

If we accept as fact that rats are not requisite for epidemics and we know that in rat-borne plague the usual infection is bubonic, with the pulmonic form secondary, what then is the virulence of wild-rodent-borne plague? Wu Lien-Teh and others of the far Eastern writers emphasize that the

wild-rodent type is spread directly to man in a highly virulent pneumonic type. Stallybass has gone so far as to suggest that virulence and pneumotropism are characters associated with sylvatic plague and that they are diminished by passage through rats. Despite this evidence it would seem from a perusal of the case records and mortality statistics that sylvatic plague as transferred to man in the United States was not pneumonic nor so extremely virulent. This was early brought out by McCoy who considered the condition subacute. Subsequent observations of the isolated cases tend to

bear this out and it has been noted that not infrequently the initial case is of the bubonic type.

Bearing the foregoing ideas in mind one realizes that it is at least theoretically possible that plague might appear in epidemic proportions provided certain conditions, as yet inadequately understood, are conducive to an increased distribution of the infective agent. How to prognosticate epizootics with their potential dangers to man is a complex problem which requires field investigations and analysis by mammalogists and entomologists.

If there is a real danger certainly steps should be taken to bring the problem under control. One must not get the impression that there is any unanimity of opinion on the subject. McCoy, in a personal interview, expressed doubt as to the realness of the danger to man from the Public Health point of view. He doubts that any serious epidemic is likely to occur as experience of forty years has shown that small direct danger from sylvatic plague exists. He also feels that if rats in cities should be infected from sylvatic sources our control measures against rat-borne plague are sufficient to prevent any serious outbreak. Other workers, notably Kellogg and Creel, are of the opinion that there is great epidemic danger to man. The former states that there is the possibility of direct extension of the disease across state lines and that it may travel by transference to the rats in urban centers in ships and freight cars. Creel feels that there is no reason to suppose that it will not reach the rats of the Mississippi Valley, where Ackert has recently reported the Oriental rat flea (*X. cheopis*) on rats, and if it does "the record will be a lasting memorial to the apathy of the Public Health officials in the United States."

CONTROL

Even though the danger of epidemic plague may not be with us, for the benefit of the occasional victim some efforts at control should be made. Among the procedures recommended the following are included.

(1) Buildings should be rat and rodent proof, and so far as possible should be de-fleat.

(2) The public should be warned not to touch or play with chipmunks or other wild rodents, especially in areas of epizootics.

(3) Epizootics should be carefully studied.

(4) Rodents should be quarantined before sale.

(5) Poisoning and gassing of burrows should be carried out wherever possible.

(6) Samples of rodent and flea populations should be studied from time to time.

(7) Intensive cultivation is an excellent control measure as the agriculturists will not tolerate the presence of rodents.

Meyer is of the opinion that sylvatic plague, unlike rat-borne plague which rises and falls within a century and finally flickers out, wild rodent sylvatic plague is everlasting and permanent. Creel, on the other hand, contends that the expenditure of \$2,500,000 would be sufficient to exterminate sylvatic plague as it now exists in the western United States, if a well organized and sustained campaign were gotten underway. All of this is pure speculation. We do know one thing—plague was "built out" of Chinatown, as no cases were reported there in 1907 and 1908, following the clean-up during the period 1900-1904.

SUMMARY

(1) An historical review of plague in the United States is given.

(2) Ecological evidence for the possible origins of plague is presented.

(3) The distribution of plague in the United States is graphically presented.

(4) Its potential danger to man is mentioned.

(5) Control measures are listed.

CONCLUSION

Plague is established in the wild rodent populations of the Western states. Where or when this sylvatic plague originated is undetermined as are its distribution and potential danger to man.

REFERENCES

- Ackert, J. E.: Oriental rat fleas established in Kansas, *Science*, 93:566, 1941.
- Blne, R.: Anti-plague measures in San Francisco, *J. Hyg.*, 9:1, 1909.
- Boelter, W. R.: *The Rat Problem*, John Bales, Sons & Danielsson, London, 1909.
- Byington, L. B.: Two epizootics of plague in wild rodents in Western U. S. in 1938, U. S. Pub. Health Rep., 55:1496, 1940.
- Creel, R. H.: Plague situation in the Western U. S., *Am. J. Pub. Health*, 31:1155, 1941.
- Currie, D. H.: Report on a case suspected of being plague, *Pub. Health Rep. U. S. Marine Hosp. Service*, 19:2408, 1904.
- Dickie, S. M.: Plague in California, 1900-1925, *Proc. Conf. State & Prov. Health Authorities of North Am.*, 1926.
- Ergorov, A.: The role of raptorial birds in the epidemiology of plague, *Rev. Microbiol. & Parasitol.*, 12:133, 1933. (In *Trop. Dis. Bull.* 31:305, 1934).
- Eskey, C. R.: Fleas as a vector of plague, *Am. J. Pub. Health*, 28:1305, 1938.
- Eskey, C. R., and Haas, V. H.: Plague in the Western part of the U. S., *Pub. Health Bull.* 254, Washington 1940.
- Evans, F. C., and Holdenried, R.: Field study of ground squirrels in relation to sylvatic plague, *Proc. Soc. Exp. Biol. & Med.*, 47:63, 1941.
- Fourie, L.: Epidemic focus of plague, *So. African M. J.*, 12:352, 1938.
- Hampton, S. C.: Plague in the United States, *U. S. Pub. Health Rep.*, 55:1143, 1940.
- Jellison, W. L.: Sylvatic plague—studies of predatory and scavenger birds in relation to its epidemiology, *U. S. Pub. Health Rep.*, 54:792, 1939.
- Jorge, R.: *Ronguers et Puce*, Masson et Cie, Paris, 1928. (Referred to by Meyer).
- Kellogg, W. H.: Present status of plague, *Am. J. Pub. Health*, 10:834, 1920.
- Kellogg, W. H.: Plague, California & West. M. J., 41:103, 1934.
- Kellogg, W. H.: The plague situation, *Am. J. Pub. Health*, 25:319, 1935.
- Kurauchi, K.: Epidemiology of plague in inner Mongolia, *J. Orient. Med.*, 12:33, 1930. (In *Trop. Dis. Bull.*, 27:732, 1930).
- Kurauchi, K.: Differentiation of *B. pestis* from allied organisms by means of their biological properties, *Kitasato Arch. Exp. Med.*, 8:45, 1931.
- Long, J. D.: Plague eradication in California, *U. S. Pub. Health Rep.*, 29:3103, 1924.
- McCoy, G. W.: Plague among ground squirrels in America, *J. Hyg.*, 10:39, 1910.
- McCoy, G. W.: Studies upon plague among ground squirrels, *Public Health Bull.*, 43, Washington 1941.
- McCoy, G. W.: The problem of plague in the United States, *Am. J. Hyg.*, 1:182, 1921.
- McCoy, G. W., and Wherry, W. B.: Subacute plague in man due to ground squirrel infection, *J. Infect. Dis.*, 6:670, 1909.
- McCoy, G. W.: Personal communication.
- Meyer, K. F.: Sylvatic plague, California & West. M. J., 41:103, 1934.
- Meyer, K. F.: Sylvatic plague, *Am. J. Pub. Health*, 26:961, 1936.
- Meyer, K. F.: Sylvatic plague, *Am. J. Pub. Health*, 27:777, 1937.
- Meyer, K. F.: Sylvatic plague, *Am. J. Pub. Health*, 28:1153, 1938.
- Meyer, K. F.: Sylvatic plague, *Am. J. Pub. Health*, 29:1225, 1939.
- Meyer, K. F.: Sylvatic plague, *Am. J. Pub. Health (Supplement)*, 31:145, 1941.
- Meyer, K. F.: The disposition of rodents as a factor in the epidemiology of plague, *Medico-Surgical Tributes to Harold Brunn*, Univ. of Calif. Press, Berkeley, 1942. (pg. 307).
- Meyer, K. F.: Ecology of plague, *Medicine*, 21:143, 1942.
- Meyer, K. F.: The known and unknown in plague, *Am. J. Trop. Med.*, 22:9, 1942.
- Meyer, K. F., and Eddie, B.: Persistence of sylvatic plague, *Proc. Soc. Exp. Biol. & Med.*, 38:333, 1938.
- O'Connor, F. W.: Concern of the United States with tropical diseases, *Am. J. Pub. Health*, 25:1, 1935.
- Pirie, J. H. H.: Plague in northwest of the Cape Province, *J. M. Assn. So. Africa*, 1:59, 1927.
- Rucker, C. W.: Plague among ground squirrels in Contra Costa County California, *U. S. Pub. Health Rep.*, 24:1225, 1909.
- The Rat and Its Relation to Public Health (various authors), *U. S. Public Health Bull.* 30, Washington, 1910.
- Smith, G.: *Plague on U. S. Commonwealth Fund*, New York, 1941.
- Stallybass, C. O.: *Principles of Epidemiology*, MacMillan, New York, 1931, pg. 310.
- Steinhans, E. A.: Catalogue of bacteria associated extracellularly with insects and ticks, Burgess, Minneapolis, 1942.
- Stewart, M. A.: Comparative study of rodent and burrow flea population, *Proc. Soc. Exp. Biol. & Med.*, 47:140, 1941.
- U. S. Public Health Service Weekly Reports, 1900 to date.
- United States P. H. S. Annual Reports, 1900 to date.
- Wheeler, C. M., et al.: Role of the burrowing owl in the spread of plague, *Science*, 93:560, 1941.
- Wheeler, C. M., and Douglas, J. R.: Transmission studies on sylvatic plague, *Proc. Soc. Exp. Biol. & Med.*, 47:65, 1941.
- Wheery, W. H.: Plague among ground squirrels of California, *J. Infect. Dis.*, 5:485, 1908.
- Wu Lien-Teh: The perpetuation of plague among wild rodents, *Am. J. Hyg.*, 8:649, 1928.
- Wu Lien-Teh: Manchurian Plague Prevention Service, Memorial Volume, 1912 to 1932, National Quarantine Service, Shanghai, 1934. (Reviewed in *J. A. M. A.*, 105:535, 1935).
- Zentner, H. M.: Human Plague in the U. S. 1900-1940, Tulane University, New Orleans, 1942.

THE COMMON DISEASES AND INJURIES OF THE SPINE*

EDWIN W. RYERSON, M. D.
CHICAGO

Pain in the back is one of the most frequent symptoms which orthopedic surgeons are called upon to interpret. Years ago, when tuberculosis of the bones was very common, many children and not a few adults came to our clinics with definite Pott's disease. Nowadays we seldom see cases of spinal or sacro-iliac tuberculosis, because in most communities the proper control of pulmonary tuberculosis has been learned, both in human beings and in cattle. If all persons with consumption would stop spitting promiscuously, and if all tuberculous cattle could be destroyed, our country would soon be free from this deadly disease.

*Read before the New Orleans Graduate Medical Assembly, New Orleans, March 18, 1943.

In Pott's disease, the bacilli are carried by the blood-stream into the body of a vertebra, and there they multiply and begin to destroy the bone. Soon they penetrate through the cortex and destroy the intervertebral disc, and then invade the next vertebra. As the vertebral bodies break down, a sharp angle appears in the spine, the typical kyphosis. A "cold" abscess begins to form, and the patient's course is steadily downward unless the proper treatment is instituted.

A very long experience has convinced me that the best treatment for tuberculous spondylitis is an operation which will fasten together the diseased vertebrae. This is done at the back of the spine, where there are no large nerves or blood-vessels to be damaged. It is much safer for the average patient to take the risk of this operation than to spend years and years lying down upon a frame or stretcher, or wearing casts and braces for an indefinite time and then finding that the disease is still as active as ever.

Perhaps I have spent too much time in discussing this disease, but I have been doing these operations for nearly thirty years, and can recommend the method most highly in suitable cases.

OSTEOARTHRITIS

Osteoarthritis, perhaps better called osteoarthrosis, of the spine is the most common cause of pain in the back. The Marie-Strümpell variety results in a complete, solid ankylosis of the vertebrae. Its exact cause is unknown. It occurs chiefly in young men, and must be treated by a long back-brace with shoulder-straps to prevent the forward bending of the spine which will inevitably take place without such protection. It is not very common. The pain disappears when the spine has become ankylosed, in two or three years.

The ordinary kind of osteoarthritis does not cause ankylosis, but does cause pain, especially when it affects the true joints of the spine, the small articulations at each side of the spinal canal. The disease irritates the edges of these joints, and bony

spurs are formed which may press upon the nerves. These small spurs are exactly like the large spurs so frequently seen at the upper and lower edge of the bodies of the vertebrae in people of advanced age. The difference is that the large spurs on the vertebral bodies are usually caused by the ordinary wear and tear of daily occupation, while the small spurs on the articular facets are more apt to be the result of rheumatoid or toxic osteoarthritis. Nearly all persons over 55 years of age will be found to have these large spurs on some of the vertebrae, and very few of them will suffer pain from the spurs.

Rheumatoid or toxic arthritis, then, is the etiologic factor in many of the painful backs, and a careful search must be made to find the focus of infection or the chemical or metabolic disturbance responsible for the symptoms. I have seen many cases where the removal of tonsils or the drainage of infected sinuses has been followed by complete relief. Infection at the root of a tooth is another cause. A gouty arthritis is much more common than most of us were taught to believe, and can be immensely improved by attention to the diet. The laboratory tests, the leukocyte count, the sedimentation rate, the urea determination, and many others, are all useful in deciding the variety of arthritis which is present. The influence of climate is very important. As a general rule, arthritic patients do much better in a warm, sunny, dry atmosphere.

The treatment of the back itself is relatively simple. If bending or twisting motions of the spine cause pain, these motions should be prevented or limited by braces or corsets or plaster of Paris body-casts. The most useful brace is the long Taylor back-brace, which has to be made to order to fit the individual patient. C. F. Taylor designed it more than eighty years ago, for the treatment of tuberculosis of the spine. It does not cure Pott's disease, but it certainly helps to cure arthritis. The brace or the corset should be worn until the back becomes painless on motion. This may require a very long time. Physical therapy, massage, heat, light, and mud baths may

all be useful. The various vaccines, drugs and medicines used by the general practitioners will not be discussed here, except to say that some men report good results from the gold treatment. Others say it is dangerous. The Federal government says gold is no good for money, but has not yet restricted it as a medicine. I have had very little experience with gold in either form.

COMPRESSION FRACTURES OF THE VERTEBRAE

The bodies of the vertebrae can be fractured by surprisingly slight injuries. A sudden forward flexion of the spine, as in an automobile collision or slipping on the ice, may drive the front edge of a vertebra downward into the upper surface of the next vertebra below. The intervertebral disc does not offer sufficient resistance to prevent a considerable compression of the vertebra beneath it. These fractures occur most frequently at the twelfth dorsal or the first lumbar region, but have been seen often at higher or lower levels. They very seldom cause any damage to the spinal cord, because the force applied is generally not very great. They do cause pain in the back, which is often not severe enough to arouse suspicion of an actual compression fracture, so that many of these patients go along for weeks or months before an x-ray examination is made. Lateral x-ray films should always be made, as the antero-posterior views may fail to show a compression of moderate degree.

These fractures may sometimes be seen in young people, but the majority of them occur in late adult life, and especially in elderly persons whose bones have become decalcified because they do not drink enough milk. Old ladies, and some who are not so old, are afraid of getting too fat if they drink milk. They drink plenty of tea and coffee, however, with cream and sugar, so they get fat just the same, and their bones become demineralized and weakened. They usually tell the doctor that milk does not agree with their stomachs, which is perfect nonsense. We must make them drink skimmed milk, which is not fattening and

contains calcium in its most assimilable form. The old-fashioned calcium lactate tablets should be given, also, over long periods of time. I have seen many old ladies whose spines were fractured in several places when the automobile stopped suddenly or a wheel went into a hole in the street. Decalcification of the bones may also be seen in disorders of the parathyroid glands, but I have not seen many such cases.

The orthopedic treatment of the damaged vertebrae has been much improved in recent years, through the work of A. G. Davis, Dunlop, O'Donoghue and many others. We now make an effort to reduce the amount of compression of the vertebral body by bending the spine backward sufficiently to pull up the crushed portion of the vertebra to its original height. This may be done by placing the patient face down between two tables, with the body sagging downward. The strong anterior ligament which connects the vertebral bodies is attached to the upper and lower margins, and with hyperextension of the back it will usually pull apart the fractured surfaces enough to restore the normal height of the vertebra. It requires much care to hold the patient securely between the tables, and several assistants are necessary. A plaster of Paris body-jacket is accurately applied from the top of the chest to the hips, with plenty of padding over the crest of the ilium.

Other methods of hyperextending the spine have been developed, such as O'Donoghue's automobile jack, which is used with the patient lying on the back. I described an attachment to the jack which makes it easy to apply a plaster of Paris jacket very accurately with little discomfort to the patient. The degree of hyperextension is under perfect control, and the jacket can be moulded very accurately over the chest and pelvis.¹

The jacket or brace must be worn until the body of the vertebra has filled completely with solid bone. This will require at least four months, because the gap does not fill rapidly and the new bone does not become hard in less than four months. It may take longer than this, and should be

checked by x-ray examination before removing the support. In hot weather, the plaster jacket may be too uncomfortable, and can be replaced by a Taylor back-brace. The results of this method of reduction of compression fractures have been extremely satisfactory.

VERTEBRAL ANOMALIES

Pain in the back may be caused by congenital defects in the construction of the vertebrae. Such anomalies as spina bifida occulta, sacralization of one side of the fifth lumbar vertebra, and spondylolisthesis (the sliding forward of a vertebral body over the one beneath) may produce a mechanical disturbance and pain. Bad posture, especially the kind where the lumbar curve (lordosis) is excessively increased, may cause a painful shearing strain upon the lumbo-sacral joints. Braces and postural training may relieve some of these complaints, and others may require a spinal fusion operation to transfer the strain to a higher level where the more normal vertebrae can take up the work at a better mechanical advantage. The animals who walk on four legs, with the back horizontal, do not have any of these mechanical disturbances at the lumbo-sacral junction, but we human beings who walk erect have not yet developed a perfect low-back mechanism. The weak spot is where the movable lumbar vertebrae join the solid mass of the sacrum. All of the bending and twisting movements of the torso throw strains and stresses upon this lumbo-sacral joint. All the weight of the body, the head and the arms is borne upon this joint. It never was a very good joint, anyway. Its component parts are more often defective or anomalous than any other ten joints in the human body. The third lumbar joint, and usually the fourth, are much better anatomically than the lumbo-sacral joint, and they do not slant down-hill. This is why the fusion operations are so successful, because the third, fourth and fifth lumbar vertebrae are ankylosed solidly to the sacrum, and the work is transferred from an imperfect joint up to a level where the joint is perfect.

INTERVERTEBRAL DISC EXTRUSIONS

During the last few years a great many articles have been published about extrusions or herniations of the intervertebral discs. The syndrome of sudden, acute pain in the low back, radiating down one or both sciatic nerves into the thigh, the calf and the outer side of the foot, with diminution of the ankle-jerk, has been described as pathognomonic of a rupture of the fibrous covering of the disc with protrusion of a portion of the disc or of the nucleus pulposus into the spinal canal. Many hundreds of operations have been performed for the removal of these extruded masses, with immediate and permanent relief of all of the symptoms. Nearly all of the cases so far described have occurred at the lumbo-sacral interspace, with a few at the fourth lumbar, and a very few at a higher level in the spine.

Let us consider the subject from several different points of view. This condition cannot be a new pathologic entity. Many people must have had this same symptom-complex during the last few thousand years. What became of them all, before neurologic surgeons were invented? None of them died of the disorder, because it never kills anyone. Looking back over forty years of active practice in orthopedic surgery, I do not seem to remember any patients with these symptoms who did not eventually recover. Some of them had manipulations of the spine, under the belief that the sacroiliac joints had slipped out of place. The osteopaths and other kinds of practitioners, and some of the regular medical profession, undoubtedly relieved many cases of disc extrusions by manipulative methods. If a disc can slip out of place, it is quite possible that it can slip back into place again, and this is proved by many cases of disc extrusion where complete remissions of symptoms occur under conservative treatment. Some of the patients who were not cured by conservative treatment were cured by spinal fusion operations during a remission. A disc is extruded only by motion of the vertebrae. If this motion is prevented by fusing the vertebrae together, the disc

cannot again become extruded. From a practical standpoint, however, it is difficult to persuade a patient to have a fusion operation performed during a remission, because his back is now free from pain, and he thinks it may never hurt him again. Many people, however, suffer such frequent recurrences that they finally accept operative treatment.

Before discussing the surgical problems, let me outline the general plan of conservative management. The patient is put to bed, with a back-rest to hold the body at an angle of thirty degrees. The knees are flexed by pillows or a support of some kind. No form of traction to the leg should be used, as this usually increases the pain. Sedatives are given if necessary, and heat is applied to the lower back. Manipulation of the back, under an anesthetic, may be attempted, but, as in J. E. Goldthwait's² celebrated case, there may be the danger of producing paralysis if too much force is used. A week or two in bed, with the lumbar spine flexed, will generally relieve the acute pain, and a corset or brace should then be applied to be worn for a few weeks. If recurrences follow this conservative treatment, the question of operation may properly be considered.

It is not a dangerous or difficult procedure to remove an extruded disc. The injection of lipiodol into the spinal canal was formerly used to determine the extent and location of the extrusion, but this method has lost its popularity because it was sometimes followed by irritation in the canal and because the symptoms of extrusion are now much better understood. It is possible, in many cases, to extract the disc through a small opening between the laminae, without weakening the mechanical structure of the vertebral column. In some clinics the patients are allowed to go home in two weeks after such operations, apparently entirely well.

Here is where I disagree with many recognized authorities. After a portion of a disc has been removed, the rest of the disc degenerates and becomes flattened. The vertebra above it sinks down upon the vertebra

below, and the space at the sides, where the nerves emerge from the spinal canal, becomes much diminished. The articular surfaces become overlapped, and a traumatic arthritis develops which may cause severe symptoms. These same symptoms have been encountered in many cases where no operation has been performed, where the disc has become degenerated from other causes than extrusion. Such cases have been recognized as clinical entities long before we knew very much about disc extrusions, and we cured them by fusing the vertebrae together.

It is therefore my present belief that when a disc extrusion has been removed by operation at the lumbo-sacral interspace, the fourth and fifth lumbar vertebrae, and perhaps also the third, should be fastened to the sacrum by one of the accepted methods of spinal fusion.

Why should we simply pull out the small piece of disc which is pressing on the nerve, and make no attempt to repair the defective mechanical structure which caused the extrusion of the disc?

REFERENCES

1. Ryerson, E. W.: Automobile jack for fractured spine, *J. A. M. A.*, 103:562, 1934.
2. Goldthwait, J. E.: The lumbosacral articulation; an explanation of many cases of "lumbago", "sciatica" and paraplegia, *Boston M. & S. J.*, 164:365, 1911.

INDICATIONS FOR VITAMIN THERAPY*

GRACE A. GOLDSMITH, M. D.†
NEW ORLEANS

Extensive research in the field of vitamins in the past few years has resulted in a tremendous increase in our knowledge of these essential food factors. New vitamins have been discovered, chemically identified, and their function studied in both animals and man. Frequently these vitamins have been made available for clinical use before their role in normal physiology, or their

*Read before the Orleans Parish Medical Society, May 10, 1943.

†From the Department of Medicine, School of Medicine, Tulane University and Charity Hospital of Louisiana, New Orleans, Louisiana.

importance in disease processes have been adequately investigated. The practicing physician has been bombarded with literature containing therapeutic claims which have not always rested on a sound scientific foundation. The busy clinician does not have time to review the literature and evaluate findings. As a result, he has either become enthusiastic and used vitamins indiscriminately, or he has decided in disgust, that vitamins are worthless and used them not at all. Neither attitude is correct and both tend to obscure the importance of adequate nutrition in which vitamins play a significant role.

Rational vitamin therapy can be planned only if certain fundamentals are appreciated. An adequate concept of the term vitamin is important. A vitamin may be defined as a chemical substance which is essential in small amounts for normal bodily function, which cannot be manufactured by the cells of the body and must, therefore, be supplied from an outside source, usually the diet. In order to delineate the indications for the use of a given vitamin it is essential to know the role it plays in bodily physiology, the daily requirement, the factors which may modify this requirement and the pathologic changes which occur when an insufficient amount of this specific compound is available. When vitamin deficiency occurs, certain signs and symptoms make their appearance and these, together with laboratory tests, permit the physician to evaluate the nutritional status. Many of the laboratory procedures which have been developed are, as yet, too complicated for routine use, but if the clinical findings in deficiency disease are recognized, and bodily needs appreciated, rational therapy can be instituted. The quantity of vitamins prescribed and the method of administration are dependent upon the severity of the deficiency and factors which may modify absorption and requirement. The requirement is variable, a small quantity being needed for the maintenance of normal processes, a larger amount in certain states of emergency and still more

when deficiency disease has occurred and pathologic changes must be reversed.

A few principles may be mentioned which apply to all deficiency states. The clinical manifestations vary with the degree and the duration of the deficiency. The symptoms and signs of acute deficiency differ markedly from those of chronic deficiency and findings of mild dietary inadequacy are often unlike those of severe depletion. Most of the clinical syndromes which have been recognized for years are those of severe chronic deficiency such as beriberi, scurvy, and pellagra. Only recently have the syndromes of mild chronic deficiency, or of acute depletion been described. A list of symptoms and signs which are suggestive of early deficiency disease has been compiled by the Subcommittee on Medical Nutrition of the Division of the Medical Sciences, National Research Council¹ (table 1). The earliest findings are often general and non-specific, such as anorexia, lassitude, loss of weight and strength, and lack of mental application. As deficiency progresses, specific signs of diagnostic value appear.

The causes of deficiency disease are many, the most obvious being an inadequate diet due to poverty, ignorance, or racial and environmental food habits and customs. Other factors etiologically important in contributing to, or precipitating vitamin deficiency include any condition which interferes with the intake, absorption, storage, utilization, or excretion of essential food substances, or which increases the need of these elements. Factors which interfere with the intake of food are anorexia, poorly fitting dentures, nausea and vomiting, and limited therapeutic diets, such as those used in obesity, gastrointestinal disease, allergy, or after operative procedures. Inadequate absorption of nutrients may occur in diarrheal diseases, in inflammatory lesions of the intestinal tract, in sprue and other steatorrheas, in achlorhydria, in the absence of the normal biliary, pancreatic, or intestinal secretion, and as a result of repeated aspiration of gastric, or intestinal contents, or of short circuiting operations on the gastro-

TABLE 1
SYMPTOMS OF VITAMIN DEFICIENCY

Lack of appetite	Paresthesias
Lassitude and chronic fatigue	Night blindness
Loss of weight	Photophobia
Lack of mental application	Burning or itching of eyes
Loss of strength	Lacrimation
History of sore mouth and tongue	Muscle and joint pains, muscle cramps
Chronic diarrhea	Sore bleeding gums
Nervousness and irritability	Tendency to bleed

PHYSICAL SIGNS OF VITAMIN DEFICIENCY

Nasolabial sebaceous plugs	Bilateral symmetrical dermatitis
Cheilosis	Purpura
Vincent's angina	Dermatitis, facial butterfly, Casel's necklace, perineal, scrotal, vulval
Minimal changes in color or texture of tongue	Thickening and pigmentation of skin over bony prominences
Red, swollen lingual papillae	Non-specific vaginitis
Glossitis	Follicular hyperkeratosis extensor surfaces of extremities
Papillary atrophy of tongue	Rachitic chest deformity
Stomatitis	Anemia not responding to iron
Spongy, bleeding gums	Fatigue of accommodation
Muscle tenderness, extremities	Vascularization of cornea
Poor muscle tone	Conjunctival changes
Loss of vibratory sensation	
Increase or decrease of tendon reflexes	
Hyperesthesia of skin	

VITAMIN A

intestinal tract. The storage and utilization of a number of the vitamins are impaired in disease of the liver. Vitamin deficiency may occur as a result of increased excretion in diabetes mellitus, diabetes insipidus, following excessive administration of fluid and during lactation. The requirement of many of the vitamins is increased by fever, hyperthyroidism and other conditions characterized by an increase in metabolism. Requirements are greater during periods of rapid growth, in pregnancy and during lactation. A high carbohydrate diet will increase the need of the "B" vitamins. Chronic alcoholism interferes with both the intake and absorption of food. In the aged, numerous factors contribute to the high incidence of deficiency disease.

In the discussion to follow, the indications for therapy with vitamin A, with three members of the B complex, thiamin, niacin, and riboflavin, and with ascorbic acid will be considered. Each of these vitamins has been extensively studied and much definite information is available regarding its use.

The optimal daily requirement of vitamin A as recommended by the Food and Nutrition Board of the National Research Council* is 5,000 international units for the average adult. Vitamin A is important in the maintenance of normal epithelium and in the visual process where it functions in rod vision as a part of the visual purple molecule and probably, also in cone vision as a component of visual violet. Deficiency of vitamin A causes night blindness and a keratinizing metaplasia which may affect any epithelial surface, but especially the skin lesions appear as a follicular hyperkeratosis, present first on the antero-lateral aspect of the thighs, later on the extensor surfaces of the arms and forearms and finally generalized in distribution. The severe lesion of vitamin A deficiency is called phrynoderma, or toad skin. An acneform lesion of the buttocks is frequently present. Visual symptoms, besides night blindness, include itching, burning and dryness of the eyes, and photophobia. Conjunctival

*All figures for daily allowances of vitamins are taken from the recommendations of the Food and Nutrition Board of the National Research Council.

changes consist of diminished luster and thickening of the conjunctivae, increased vascularity, Bitot's spots and, in advanced deficiency, xerophthalmia. According to Kruse, changes in the conjunctivae are the earliest findings in vitamin A deficiency, when examination is made with a biomicroscope.

The indications for therapy with vitamin A include any condition in which the lesions described above occur. Vitamin A is specific for xerophthalmia, phrynoderma, and for most cases of night blindness without organic eye disease. It is unnecessary to give supplementary doses of vitamin A to normal persons taking an adequate diet. There is no evidence that amounts of this vitamin, in excess of requirements, are beneficial, or that they reduce the incidence of infections as has been claimed. When the diet is inadequate, then supplements are legitimate. During pregnancy, it is probably wise to increase the intake of vitamin A. The absorption of carotene, the precursor of vitamin A, which is found in green and yellow vegetables, is hindered by diets low in fat and by mineral oil. If a low fat diet is prescribed therapeutically, for weight reduction, or cholecystitis, vitamin A should be administered. It is probably wise to give this vitamin when mineral oil is taken regularly. Vitamin A has been used successfully in treating a number of ophthalmologic conditions, in follicular conjunctivitis, phlyctenular disease and as a local application into the conjunctival sac in many diverse states. A number of clinical conditions interfere with the absorption of vitamin A, namely, chronic ulcerative colitis and diseases associated with malabsorption of fat, such as sprue, celiac disease and obstructive jaundice. In these pathologic states vitamin A should be administered in large amounts. Patients with liver disease often show poor dark adaptation and epithelial changes characteristic of vitamin A deficiency. Vitamin A is stored in the liver and that organ is responsible for the conversion of carotene to vitamin A. Hence, therapy is indicated in cirrhosis and in other types of hepatic dam-

age. In diabetes mellitus carotene is not satisfactorily converted to vitamin A. The same is true of hypothyroidism. In these diseases small supplementary doses of vitamin A appear to be beneficial. Vitamin A has been recommended in the treatment of urinary lithiasis, but available evidence has not shown such therapy to be efficacious.

In mild deficiency states 10,000 to 30,000 I. U. daily are effective therapy. In severe deficiency 50,000 to 100,000 I. U. may be given. Vitamin A may be administered parenterally if desired. Healing of the skin and conjunctival lesions is relatively slow and may take several months. Recovery from night blindness varies from a few days to weeks, or even months.

VITAMIN B COMPLEX

The members of the vitamin B complex which are known to be essential to man and which have been sufficiently studied to be important clinically, are thiamin, riboflavin and niacin. Since the "B" vitamins have a somewhat similar distribution in nature, deficiency of one of the group is often accompanied by deficiency of the others as well. In function, too, the "B" vitamins are related. Each of them is important in one or more enzyme systems in cellular metabolism. Thiamin functions as the enzyme co-carboxylase in the breakdown of pyruvic acid in intermediate carbohydrate metabolism. Niacin forms the active portion of coenzymes I and II and riboflavin of several enzymes which are known to be important in oxidation-reduction reactions in the tissues, especially those involving carbohydrate.

THIAMIN—VITAMIN B₁

The daily requirement of adults is from 1.2 to 2.3 mg. It varies with the caloric intake and with the carbohydrate content of the diet. The early findings in deficiency have been studied experimentally in human beings by Williams,² and by Jolliffe,³ and have been found to resemble neurasthenia. From a biochemical standpoint there is impairment of carbohydrate tolerance and an accumulation of pyruvic acid in the blood and tissues. The late findings are peri-

peripheral neuritis, edema and the cardiovascular changes characteristic of beriberi. Early symptoms of peripheral neuritis are burning of the feet, paresthesias of the lower extremities and cramps in the muscles. Signs include calf muscle tenderness, hyperesthesia of the skin, pretibial anesthesia, muscular weakness and an increase, or decrease in tendon reflexes. Anesthesia, absent reflexes and muscular atrophy occur in advanced deficiency. The lower extremities are extensively involved before the upper are affected. Cardiovascular findings include edema and signs of right sided heart failure. The edema may appear before any dyspnea is noted, is often massive and accompanied by effusions into the serous cavities. Tachycardia, a wide pulse pressure, enlargement of the heart to both right and left, gallop rhythm, systolic murmurs and a normal or decreased circulation time are frequent manifestations. The electrocardiogram often shows low complexes, flattening of the T waves and prolongation of the Q - T interval. Acute circulatory collapse may occur. A diagnosis of beriberi heart disease is made on the basis of the above findings, the history of an inadequate diet, the absence of the usually etiologic factors in heart disease and a rapid response to the administration of thiamin.

The most obvious indications for therapy with vitamin B₁ are dry and wet beriberi as described above. The average American diet is apt to be deficient in this vitamin since it contains such a large percentage of sugar and of highly refined cereals from which the "B" vitamins have been removed. In the presence of probable signs and symptoms of deficiency and when the dietary history suggests a low thiamin intake, it is advisable to administer small amounts of this vitamin. The neuritis of chronic alcoholism and that which occurs during pregnancy respond to treatment with thiamin. There is considerable controversy in regard to the value of vitamin B₁ in diabetic neuritis. If the lesion involves the lower extremities and is bilateral, thiamin may be of value. In achlorhydria and during therapy with alkalis, an additional quantity of

thiamin may be needed because of inadequate absorption. There is an increased requirement of thiamin in fevers and in hyperthyroidism. Vitamin B₁ may aid in preventing loss of weight in the latter condition and is of assistance, together with the other "B" vitamins, in the preoperative preparation of patients with thyrotoxicosis. The use of intravenous glucose in postoperative therapy may precipitate thiamin deficiency in individuals whose nutritional state was suboptimal prior to surgery. Thiamin should be given in conjunction with infusions. The stabilization of diabetes with insulin, may likewise precipitate thiamin deficiency by increasing the quantity of carbohydrate utilized and thus raising thiamin requirement. Thiamin may be useful in the treatment of Wernicke's encephalitis and of delirium tremens. The value of thiamin in a number of other neurologic conditions such as herpes zoster, trigeminal neuralgia and Korsakoff's syndrome has not been decided, but is worthy of further study.

Thiamin has been widely used in the treatment of anorexia. It is of value only if the poor appetite is due to vitamin B₁ deficiency.

The therapeutic dose of thiamin varies from 5 mg. daily in mild deficiency to 15 to 30 mg. daily in severe neuritis and possibly to as much as 50 to 100 mg. daily in the acute cardiac form of beriberi. Neuritic pain is promptly relieved, but restoration of function may take weeks or months. Cardiovascular manifestations may show improvement within a few hours to several days, although weeks may elapse before complete return to normal.

RIBOFLAVIN—VITAMIN B₂

The daily requirement of riboflavin is estimated to range between 1.8 and 3.3 mg., the quantity varying with caloric intake. Early symptoms of deficiency consist of visual disturbances such as photophobia, burning and itching of the eyes, lacrimation, fatigue of accommodation and dimness of vision, and of soreness, or burning of the tongue and mouth, with dysphagia.

The lesions characteristic of riboflavin deficiency are cheilosis, glossitis, a seborrheic dermatitis, and superficial vascularizing keratitis. The lesion of the lips consists of denudation and redness at the line of closure and fissures at the angles of the mouth. The dermatitis occurs in the nasolabial folds, over the bridge of the nose, at the outer and inner canthi of the eyes and occasionally on the forehead, or ears. The tongue is purplish, or magenta red in color, may be deeply fissured and the papillae are flattened and swollen, resulting in a pebbled appearance. In long standing deficiency, the tongue becomes atrophic. The ocular signs of lack of riboflavin are demonstrable at first only with the slit lamp. There is congestion and proliferation of the limbic plexus of vessels with invasion of the cornea by small capillaries which anastomose to form tiers of loops. As vascularization increases it becomes grossly visible and may be accompanied by injection of the conjunctival vessels. The cornea may show superficial punctate opacities, or nebulae in various layers of the substantia propria. Staining with fluorescein will demonstrate early lesions. Not all vascularization of the cornea, or superficial punctate keratitis is due to riboflavin deficiency. In some recent studies, Dr. Butterfield and I have found slight extension of capillaries beyond the sclerocorneal junction in many normal persons. Sandstead⁴ has reported similar observations. Superficial punctate keratitis in my experience, may at times, be due to riboflavin deficiency, at other times, to vitamin A deficiency, or it may be due to an infectious process unrelated to a deficiency state.

Ariboflavinosis occurs most frequently in association with niacin deficiency and the characteristic lesions have for years been considered a part of the clinical picture of pellagra. The incidence of riboflavin deficiency is high, and many diseases are complicated by an inadequate supply of this vitamin. Since the factors which precipitate riboflavin and niacin deficiency

are similar, they will be discussed in connection with the latter.

The therapeutic dose of riboflavin is from 5 to 30 mg. daily. In a number of persons there appears to be poor absorption of this vitamin and in these instances, administration must be parenteral. Relief of symptoms is prompt but signs may take weeks to disappear, cheilosis responding more rapidly than glossitis or corneal vascularization. Lesions often recur when therapy with riboflavin is discontinued.

NIACIN—(NICOTINIC ACID)

The daily requirement of niacin is unknown, although 12 to 23 mg. has been suggested as probably sufficient. Early symptoms of deficiency include weakness, lassitude, anorexia, digestive disturbances, nervousness, irritability and apprehension. The psychic state may resemble an anxiety neurosis. As deficiency progresses, the mouth and tongue become sore and diarrhea develops. The physical findings in severe pellagra are well known, bilateral symmetrical dermatitis, mucous membrane lesions and psychic disturbances. The dermatitis may involve the face, neck, backs of hands and forearms, the feet, legs, perineum, and genitalia. The skin lesion ranges in severity from mild erythema and edema to the formation of vesicles and bullae with secondary infection and finally pigmentation. The mucous membrane changes include stomatitis, glossitis (a fiery red, swollen tongue), esophagitis, proctitis, vaginitis, and urethritis. Psychic disturbances may be of all types, but delirium predominates in severe pellagra and may progress to dementia. In mild, early niacin deficiency, the tongue is red only at the sides and tip; in long standing deficiency, it becomes markedly atrophic. The dermatitis of mild chronic pellagra is characterized by thickening, and pigmentation of the skin over the bony prominences, especially of the elbows, knees, and dorsum of the feet and ankles, less often of the knuckles and wrists. Niacin deficiency frequently occurs without skin lesions.

Acute severe deficiency of nicotinic acid has been described by Jolliffe,⁵ and by Sydenstricker and Cleckley.⁶ The findings are those of a toxic psychosis, or of an acute encephalopathy with clouding of consciousness, cogwheel rigidities, and grasping and sucking movements. This picture of severe niacin depletion may appear during acute febrile illnesses such as pneumonia, or postoperatively, especially following the use of large amounts of intravenous glucose. The glossitis and dermatitis of niacin deficiency and the lesions typical of ariboflavinosis may also be precipitated by parenteral feeding with glucose. In any case where such therapy must be prolonged, niacin, riboflavin and thiamin should be given with the infusions.

Treatment of mild niacin deficiency consists of the administration of 100 to 200 mg. of niacin, or niacinamide daily. In acute pellagra, or in encephalopathy, 500 to 1,000 mg. may be needed. When therapy is given parenterally, niacinamide should be used rather than the free acid, since the latter may produce severe vasodilating reactions. Improvement is rapid, especially of encephalopathic manifestations. The lesions of the skin and tongue may take considerable time for complete healing.

Deficiency of any of the members of the B complex may occur in febrile illnesses, in hyperthyroidism, and in fact, in any condition associated with an increase in metabolism. The stomatitis and glossitis of many infectious diseases is related to an inadequate supply of niacin and riboflavin. Deficiency of both of these vitamins may appear when diabetes is treated with a high carbohydrate diet and insulin.⁷ Many diabetics show skin lesions and glossitis which improve with niacin and riboflavin therapy. Diarrheal diseases and other conditions associated with malabsorption, including congestive heart failure, often lead to a deficiency of all of the "B" vitamins. In cirrhosis of the liver and in chronic alcoholism, vitamin B complex deficiency is almost a constant finding. Likewise in malignancy, deficiency is common. In treating deficiency syndromes due to

lack of any of the "B" vitamins, some source of the entire B complex such as brewers' yeast, or liver extract, should be administered since deficiency is seldom confined to a single vitamin.

The incidence of deficiency of the "B" vitamins is high. In a recent survey of 200 patients admitted to the medical wards of Charity Hospital in New Orleans, 40 per cent showed definite and 67 per cent probable evidence of deficiency of niacin, riboflavin, or of both vitamins.⁸ About 25 per cent had evidence of thiamin deficiency as well.

ASCORBIC ACID

The recommended daily allowance of vitamin C is 70 to 75 mg. for adults. Ascorbic acid is essential in the body for the formation and maintenance of the intercellular substance of tissues of mesenchymal origin, such as connective tissue, bone and capillaries. It may have a role in oxidation-reduction reactions, in the metabolism of aromatic amino acids, or in the immunologic mechanism, but none of these functions has been unequivocally demonstrated.

The early manifestations of ascorbic acid deficiency in adults are excessive fatigability, lassitude and muscle and joint pains. Specific findings are: swollen, tender, spongy gums which bleed readily and perifollicular petechial hemorrhages, especially of the lower extremity. Later, ecchymoses may occur, as well as hemorrhages into the muscles and subcutaneous tissues, hemorrhagic effusions into serous cavities, epistaxis, and bleeding from the gastrointestinal tract. There are changes in the dentine and cementum of the teeth, which in severe scurvy, become loose and fall out. Although frank scurvy is rare, mild vitamin C deficiency is frequent. Loss of vitamin C in the handling and preparation of food contributes largely to this finding.

Vitamin C is important in wound healing, as shown by many workers among them, Crandon, Lund and Dill,⁹ who studied this subject in experimental human deficiency.

Vitamin C should be given in the preoperative preparation of patients whenever dietary history, clinical findings, or chemical determinations of ascorbic acid in the blood and urine suggest an inadequate supply of this factor.

Vitamin C deficiency complicates a number of diseases. In peptic ulcer, the therapeutic diet prescribed is apt to be low in ascorbic acid. In fever and infectious processes, the quantity of ascorbic acid in the blood and the amount excreted in the urine is decreased. There appears to be an increased need of vitamin C in infections, and a lack of ascorbic acid may have an unfavorable influence on the course of such illnesses. While therapy with vitamin C in infections has, on the whole, been disappointing, it would seem advisable to increase the intake in diseases of long duration, such as tuberculosis and rheumatic fever. There may be malabsorption of ascorbic acid in diarrheal states and in achlorhydria. Arsenical sensitivity is believed by many to be diminished by the administration of vitamin C. Therapy would appear to be indicated in these conditions.

In treating ascorbic acid deficiency the vitamin should be given in doses of 100 to 1,000 mg. daily, depending on the duration and severity of the depletion. Parenteral administration may occasionally be necessary.

SUMMARY

In the above discussion, a number of the important indications for vitamin therapy have been mentioned. In the evaluation of nutritional status, clinical findings have been stressed since laboratory procedures are available only in large medical centers and must be further simplified before becoming widely used.

In any discussion of nutritional deficiency, it should be emphasized that there is no completely satisfactory substitute for an adequate diet. Such a diet is essential in both the prevention and treatment of deficiency disease. Vitamin deficiencies are usually multiple and poly-vitamin preparations are logical therapy in instances

where diet alone is incapable of bringing about restoration to normal. Synthetic crystalline vitamins are indicated for the relief of acute and chronic manifestations of deficiency, for the replenishment of reserve stores in the body, and temporarily to supply essential chemical substances in pathologic states which interfere with the normal intake, assimilation and utilization of food.

REFERENCES

1. Subcommittee on Medical Nutrition, Division of Medical Sciences, National Research Council—Recognition of Early Nutritional Failure in Infants, Children, Adolescents and Adults, *J. A. M. A.*, 118:615, 1942.
2. Williams, R. D., Mason, H. L., Wilder, R. M., and Smith, R. F.: Observations on induced thiamin deficiency in man, *Arch. Int. Med.*, 66:785, 1940.
3. Jolliffe, N., Goodhart, R., Gennis, J., and Cline, J. K.: The experimental production of vitamin B₁ deficiency in normal subjects: The dependence of the urinary excretion of thiamin on the dietary intake of vitamin B₁, *Am. J. Med. Sci.*, 198:198, 1939.
4. Sandstead, H. R.: U. S. Public Health Reports, 57:1821, 1942.
5. Jolliffe, N., Bowman, K. M., Rosenblum, L. A., and Fein, N. D.: Nicotinic acid deficiency encephalopathy, *J. A. M. A.*, 114:307, 1940.
6. Cleckley, H. M., Sydenstricker, V. P., and Geeslin, L. E.: Nicotinic acid in the treatment of atypical psychotic states associated with malnutrition, *J. A. M. A.*, 112:2197, 1939.
7. Sydenstricker, V. P., Geeslin, L. E., and Weaver, J. W.: Avitaminosis occurring in diabetic patients under insulin therapy, *J. A. M. A.*, 113:2137, 1939.
8. Goldsmith, Grace A.: The incidence and recognition of riboflavin and niacin deficiency in medical diseases, *South. Med. J.*, 36:108, 1943.
9. Crandon, J. H., Lund, C. C., and Bill, D. B.: Experimental human scurvy, *New England J. M.*, 223:353, 1940.

DISCUSSIONS

Dr. Marie Stanbery (New Orleans): We eye doctors are a little spoiled; because ophthalmology is an art and almost a science, we think things ought to be definite. And there is something terribly indefinite about the question of lack of vitamins. The isolation of vitamins as pure chemicals in crystalline form is the most definite sort of step; a great deal of progress has been made in the past 15 or 16 years. I remember a paper given about that long ago, in which it was reported that some sort of pellagra was cured by the use of dried brewers' yeast. There was a lot of head-shaking in the audience. We do not shake our heads today.

However, I believe there is another 15 years of progress ahead of us. The subject, at present, is so indefinite for most clinicians that we must ask research workers to give us something further. For instance, we are told that the signs of riboflavin deficiency are reddened, cracked lips, sebaceous collections at the alae nasae, and greasy scales on the lid margins, on a hyperemic base. The lid

symptoms are always stated last, and should therefore be least common. Yet, in this climate, I think the characteristic red cracked lips are rare. On the other hand, scales on the lid margins are quite common. In the treatment of this type of blepharitis marginalis, riboflavin is just part of our armamentarium. Nearly always an angular conjunctivitis is also present, and must be treated with the customary zinc sulphate solution: that is, riboflavin by itself is inadequate. I would like to hear Dr. Goldsmith's reaction to this.

Dr. Grace A. Goldsmith (In closing): I agree with Dr. Stanbery that certainly there is a tremendous amount of work still ahead. We are just beginning to scratch the surface, as far as vitamins are concerned. Even the findings related to the eye are still in the primary stage of investigation. Riboflavin therapy will not cure all of the eye conditions mentioned. It will cure a certain number of them and, in conjunction with other measures, will assist in alleviating others. In some instances there is apparently no benefit. In our experience in the eye clinic we have found similar lesions helped at times by vitamin A, at others by riboflavin. There is a great deal more to be learned especially in regard to the interaction of vitamins and the effect of deficiency of one factor on the function of another.

UNUSUAL INFECTIONS IN THE NEWBORN CAUSED BY

*STAPHYLOCOCCUS AUREUS**

RUTH G. ALEMAN, M. D.
NEW ORLEANS

During the past year a number of unusual infections have come under my care, from which I have selected four cases of *Staphylococcus aureus* infection in the newborn to report. The youngest, a premature baby, developed a series of skin abscesses; the second, full term, developed osteomyelitis on the eleventh day of life; the third, nineteen days old, a blood stream infection; and the fourth, three weeks old, peritonitis. Three recovered and one died.

These cases are being reported so as to stress the importance of safeguarding newborn infants from all sources of infection; also, to show the efficacy of chemotherapy, in conjunction with blood transfusions and other supportive measures, and its toleration by the newborn.

Infections in the newborn are by no means new. On the contrary, they have been the curse of hospitals, of institutions and homes as long as there have been doctors to worry about them. In recent years it has been the practice in modern hospitals to lend every effort to the prevention of infection both prenatally and from the instant the baby is born. Immediately at birth he is received aseptically, his cord and eyes are given prophylactic treatment, while the obstetrician has made the greatest effort to prevent trauma to his body which might subsequently become avenues for infection.

The etiologic factors of infection in the newborn are well known. Among them (1) infection may occur in utero; (2) in some cases in the genital tract of the mother; (3) infection from the mother's milk; (4) from any portion of the mucous membrane; (5) any abrasion or wound of the skin; (6) the umbilicus is a common portal of entry. Infection may be a direct result of a lack of aseptic technic during delivery, and it may occur before or after separation of the cord.

Organisms most frequently encountered are staphylococci, streptococci, pneumococci, and members of the colon group. Gonococci, *B. pyocyaneus* or other organisms are occasionally found.

PATHOLOGY

If the infection is from the umbilicus, the process may involve only the region immediately surrounding the umbilicus; often, however, it extends along the regional vessels in the vicinity in widespread suppuration. Peritonitis may occur, or other infections anywhere in the body. Any one or all of the serous membranes may become involved. Suppuration of the bones or joints is frequent. Erysipelas is exceedingly common. The main difference in the septic processes of the newborn and those seen later in life is the multiplicity of infections which may be found in the same patient; peritonitis, pneumonia, pericarditis and empyema have all been found in the same infant.

*Read before the Orleans Parish Medical Society, May 10, 1943.

Sepsis of the newborn must be looked upon as a preventable infection, both from the obstetric point of view and the after care, the proper care of the cord, the eyes and the body of the baby generally, especially the umbilicus and any trauma the baby may have sustained in delivery.

Antistaphylococcic immunity is a complex clinical problem which seems in early life to depend on maternal immunity and in later life on previous infections. And this immunity is no doubt conserved in different degrees in relation to constitution, environment, or other determining factors.

It has been found by Bentivoglio and Moschini¹ that the amount of antistaphylococcic toxin in the blood serum of the newborn is always identical with that of the mother. Following exhaustive studies, these authors concluded that in newborns this passive immunity of maternal origin diminishes rapidly and is finally exhausted two or three months after birth. On the other hand, in nurslings and in infants of all ages there may exist a certain degree of antistaphylococcic immunity which can be determined in the majority of cases by the presence in the serum of certain quantities of staphylococcic antitoxin. The naturally acquired antistaphylococcic immunity seems to be the result of previous contagions or infections of the specific agent which has been more or less hidden (staphylococcic antigens).

CASE No. 1

Staphylococcus aureus skin abscesses were observed in a premature baby boy, born at Hotel Dieu, January 23, 1943, and discharged on recovery, March 10, 1943.

Baby McL., a premature baby boy, seven months' gestation, was delivered normally, in asphyxia, weighing 4 pounds, 11 ounces. He was found with one congenital abnormality, namely, hypospadias.

The baby was put in an incubator, given vitamin K and oxygen continuously. He did rather badly, having intermittent attacks of cyanosis, and was kept under oxygen tent for four days. On the fourth day of life he developed an abscess over the right scapula at the site of a needle puncture for clysis, elevation of temperature to 104° F., and leukocytosis of 23,250. The abscess was incised and drained, a culture showing *Staphylococcus aureus*.

He became deeply jaundiced and remained so for a week's time, and was extremely ill during the three following weeks. On the twenty-eighth day of life another abscess in the right mid-axillary line was incised and a large amount of pus extracted. Seven days later a third abscess on the left buttock was also incised and drained. The baby had a very stormy time but made a nice recovery, and when discharged from the hospital at six weeks of age, weighed five pounds.

Treatment: The baby was given supportive treatment with Ringer's solution and glucose clyses and four transfusions during the first month of life. When the infection made its appearance sulfadiazine therapy was instituted and continued. The drug was given internally and applied in the incisions. Breast milk was given throughout.

This case is unusual because of its early onset, its severity and recovery in a premature baby. The blood changes in this case were essentially the same as those reported in a similar infection by Roy M. Greenthal in 1936.²

CASE No. 2

Peritonitis in a three weeks' old baby with recovery. Admitted to Hotel Dieu October 29, 1942, and discharged December 12, 1942.

I first saw Baby L. A. at home during her third week of life, two days after the abdomen had begun to swell. Delivery had been normal and there was no history of previous illness. The weight at birth was 7 pounds, 11 ounces. The baby was a well developed and well nourished newborn girl with marked distention and tenseness of the abdomen, showing an area of redness about two inches long at the right of the umbilicus. The umbilicus had apparently healed. Temperature was 102° F, otherwise physical examination was negative. My first impression was intestinal obstruction, but, upon investigation, found the baby taking her feedings normally without vomiting, and passing normal stools. A tentative diagnosis of intra-abdominal infection, probably peritonitis, was made. The mother at the time had a draining infection in her breast,—a culture from which showed *Staphylococcus aureus*.

Sulfadiazine was given by vein immediately on admission and subsequently continued by mouth, being given in doses of one grain per pound of body weight per 24 hours. The drug was discontinued only once for 24 hours during the baby's entire stay in the hospital, and continued to within two days of discharge.

Two days after admission a surgical consultant was called who advised operation, believing the condition to be intestinal obstruction. A right rectus incision was made, and upon opening the peritoneal cavity a great quantity of thick, fibrinous, yellowish exudate was found, without any

evidence of obstruction. Sulfathiazole powder (4 grams) was placed in the abdominal cavity and the incision closed without drainage. A culture was made which showed *Staphylococcus aureus*, and it is my opinion that the route of entrance to the baby was through the umbilicus from the mother's breast infection.

After operation the temperature remained high, ranging from 101°-103° F. for two weeks, and then gradually decreased until it finally became normal before discharge.

On the seventh postoperative day a small mass appeared midway between the xiphoid process and the umbilicus. This suppurated and drained spontaneously, healing without surgical interference. Eleven days after operation, bronchopneumonia developed and further endangered the baby's life. Following this, another infection occurred below the right scapula, which necessitated surgical drainage.

Treatment: In addition to chemotherapy, the treatment included blood transfusions, sterile breast milk, clyses, vitamin C in large doses, and vitamins D, A and B. She was given 30 to 60 c.c. of blood transfusion about every third day from the date of admission to within ten days of discharge, that is, twelve in all.

At the time of discharge, the baby's general condition was good, she was free of fever, the pneumonia had cleared entirely, and all suppurating processes had healed. The total white blood count remained high during her entire illness, being as high as 33,000 when pneumonia complicated the picture, and finally, on discharge, going down to 10,250.

In spite of the long continuance of sulfonamide therapy, the blood at no time showed agranulocytosis or hemolytic anemia. The urine was normal throughout except for the appearance of large quantities of sulfa crystals, at which time the drug was withheld for 24 hours.

This baby has progressed as any normal infant should. She sat up at five and a half months. She is now seven months old and weighs 19 pounds, 5 ounces.

CASE No. 3

Blood stream infection caused by *Staphylococcus aureus*, admitted to Hotel Dieu September 10, 1942, expired October 2, 1942.

Baby D. D., a girl weighing 6 pounds, 2 ounces at birth, was delivered normally at full term, and breathed spontaneously. The mother had an infected finger during the puerperium and for a few days the baby was not allowed to come to breast for fear of infection. So far as the mother knew, the baby was normal during her hospital stay, except for a rather large abrasion on each heel. These were apparently rather deep, since the gauze which protected each had to be soaked before removal could be accomplished.

I first saw Baby D. at home when 19 days old and advised immediate hospitalization. She was admitted with a history of fever, semi-coma and diarrhea of two days' duration. Her temperature was 102° F. The general impression was that of an acutely ill baby, whose physical examination was negative except for slight distention of the abdomen and a spleen palpated just below the costal arch.

Blood cultures made the day of admission and subsequently showed *Staphylococcus aureus*. Repeated agglutinations for the common fevers were all negative, nor was malaria found. We persisted in our blood studies because the baby's physical examination was essentially negative until a short time before death. Eighteen days after treatment had been instituted, the culture became negative and remained so as late as four days before death. Wassermann and Kahn tests on both baby and mother were negative. Stools and urine were repeatedly negative.

On the day of admission the white cell blood count was 9,250, neutrophils 78 per cent, lymphocytes 20 per cent. Frequent blood counts showed leukocytosis from 15,000 to 21,000 with a high polymorphonuclear count on all occasions.

The temperature curve was of septic type, ranging from 97°-104° F.

The baby seemed to be improving until the nineteenth day, when she developed nystagmus and spasticity of the arms, with hyperactive reflexes. Her pulse was irregular, respiration labored, and she became extremely pale. On the twenty-second day she expired.

Spinal tap was done on two successive days when central nervous system symptoms developed. There was nothing characteristic about the fluid except that in a culture of each, *Staphylococcus aureus* was present.

Treatment: On admission, thinking we were dealing with diarrhea, sulfaguanadine was given, but when diagnosis of blood stream infection was established, this was changed to sulfadiazine and continued. Blood transfusions were given every four days. The baby was fed breast milk during her entire illness.

CASE No. 4

Osteomyelitis of the left femur caused by *Staphylococcus aureus* in an eleven day old baby, with recovery. Born at Hotel Dieu, March 3, 1943, discharged April 22, 1943.

Baby M., a boy, delivered by cesarean section at full term, was normal at birth, weighing 6 pounds, 10 ounces. When seen by me two days after birth, the baby was normal except for two small abrasions resembling needle scratches on the left external malleolus.

He made normal progress until the eleventh day after birth, when he developed fever of unknown origin (101.8° F.), which continued without localizing symptoms for four days. The abrasions

on the foot, while still present, were not visibly infected. Sulfadiazine therapy was instituted.

Slight generalized swelling in the left extremity became apparent on the fourth day of illness, becoming more marked each day. A uniform swelling showed in the entire left lower extremity above and below the knee. After ten days this localized above the joint anteriorly, where a fluctuating mass was palpable. The total white cell count was 24,000.

A surgical consultation was held at the time and an x-ray showed "Periosteal reaction in the distal end of the left femur due to osteomyelitis." Another x-ray report (six days later) read, "Previously reported osteomyelitis distal end of left femur shows considerably more periosteal reaction than at previous examination. There is some destruction in the shaft of the femur."

An incision was made by the surgeon immediately over the distal end of the femur without entering the bone. Pus, which was readily found, was drained. Drainage continued for twenty days. Culture showed *Staphylococcus aureus*.

An orthopedist placed the leg in a posterior plaster splint which has been repeatedly changed in order to prevent fixation of a 90 degree knee angulation.

The baby was never extremely ill. The highest temperature was 102.4° F., reached on one day only. The total white blood count was 29,000 just before operation, dropping to 17,000 when drainage was instituted. The urine remained normal. He was discharged on the fifty-first day of life in very good condition, there being no further drainage from the incision, and very little remaining angulation.

Treatment: As stated above, sulfadiazine therapy was instituted at the appearance of infection. This was continued until four days after surgical drainage had been established. Sulfathiazole powder was applied to the wound. The baby was given two blood transfusions, large doses of vitamins, and breast milk.

The findings, treatment and results in this case conform almost exactly with a similar case summarized in March of this year by W. T. Green,³ of the faculty of Harvard University, who has made several reports of his experience with osteomyelitis in infants treated at the Children's Hospital of Boston. A few quotations from his articles bring out the salient features to be considered in dealing with osteomyelitis in young infants: "Swelling is more diffuse in infants than in those older" (1943). "At operation it is not necessary to carry out a procedure on the bone if the secondary abscess is adequately drained" (1935).

"Chemotherapy has assisted greatly in the care of these patients and should be instituted from the start" (1943).

Samuel Stone,⁴ of New York, (1942) reporting four cases of osteomyelitis in the newborn treated at Bellevue Hospital, found, as we have, that "there are few reports of osteomyelitis of the long bones in the newborn;" also, "Osteomyelitis in the newborn child appears to be a benign disease; but when it is a manifestation of sepsis, the prognosis is more grave and depends on the severity of the septic process."

REMARKS

There is little doubt that the remarkable recovery of three of the infections here reported was due to sulfonamide drug therapy. Other important factors are early diagnosis, accurate bacteriologic diagnosis, correct nutrition, which often requires careful administration of intravenous fluids to correct disturbances in water and electrolyte metabolism, transfusion,—and last but by no means least, surgical procedures which may be of equal or even greater importance.

INCIDENCE IN CHARITY HOSPITAL

A survey of the records of the New Orleans Charity Hospital for a period of five years and ten months, beginning July 1, 1937, and ending May 1, of this year (1943), shows that a total of 29,575 newborn infants were treated in the hospital.

Osteomyelitis: If any osteomyelitis occurred among newborn infants during this period, the information is not on file in the Record Library. Mahorner's⁵ exhaustive study of osteomyelitis in the same institution through 1940, also failed to show any cases of osteomyelitis in the newborn.

Abscesses: Fourteen newborn infants developed abscesses in various locations of the body surface, or one in every 2,112 newborns treated. In five of the nine recoveries the abscesses were located on the breast (one case bilateral), one on the cheek, one in the perianal region, one at the unspecified site of a hypodermic injection. One case of scalp abscess, although complicated with septicemia, recovered. Another case

of scalp abscess, complicated with bronchopneumonia, died. The other four deaths included: abscesses of the back, with pneumonia; abscess of the thigh, with septicemia; abscess of the axilla with septicemia; abscesses of wrist and testicle, with septicemia, perionitis and bronchopneumonia.

Septicemia: Strange to say, there were also 14 cases of septicemia in the newborn, an incidence in the abscess group, of one in 2,112 newborns treated in the hospital. Thirteen died, a mortality of 93 per cent. The cured case, mentioned above, was one of scalp abscess and septicemia.

Peritonitis: There were 15 cases of peritonitis in the newborn, all of whom died. Ten of these babies were operated on for congenital malformations, including evisceration of intestines in five cases. The remaining five babies in this group, whose peritonitis had no connection with a post-operative status, represent an incidence of one in 4,915 newborns in the Charity Hospital from July 1, 1937 to May 1, 1943. Only one was diagnosed as caused by staphylococcus.

There was an overlapping of groups in five cases. Four newborns each had two of the infections with which this report is concerned, and another, three; abscess and septicemia in two fatal cases; abscess and septicemia in one cured case; septicemia and peritonitis in a fatal case; abscesses, septicemia, and peritonitis, as well as bronchopneumonia all in one baby who died on the seventeenth day of life. Such multiplicity of infections is characteristic of the newborn.

SUMMARY AND CONCLUSIONS

Four cases of *Staphylococcus aureus* infection in the newborn have been reported from my private practice in the last seven months: one case of skin abscesses on the fourth day of life, one case of osteomyelitis of the left femur on the eleventh day of life, a blood stream infection at nineteen days of age, and peritonitis in a newborn three weeks old.

In each case a sulfonamide drug was administered by vein, by mouth, or in the

wound. In no case was there agranulocytosis or hemolytic anemia. There were no renal complications in any of the cases.

In addition to chemotherapy, each newborn was given repeated small blood transfusions, was fed breast milk and vitamins A, B, C, and D.

One of the four cases failed to respond to treatment, the blood stream infection, which terminated fatally on the twenty-fourth day of illness.

These cases illustrate the value of chemotherapy when administered in conjunction with supportive treatment and surgery when indicated.

They also emphasize the necessity of safeguarding newborn infants from all sources of infection.

REFERENCES

1. Bentivoglio, G. C., and Moschini, S.: Natural anti-staphylococcal immunity in nurslings and infants, *Lattante*, 8: 107, 1937.
2. Greenthal, Roy M.: The hematology of sepsis of the newborn, *Arch. Pediat.*, 53: 583, 1936.
3. Green, W. T.: Osteomyelitis in infancy. *J. A. M. A.*, 105: 1835, 1935; Green, W. T., and Shannon, J. G.: Osteomyelitis of infants: Disease different from osteomyelitis of older children, *Arch. of Surg.*, 32:462, 1936; Green, W. T.: Orthopedic problems of infancy, *Connecticut State M. J.*, 7:227, 1943.
4. Stone, Samuel: Osteomyelitis of the long bones in the newborn, *Am. J. Dis. Children*, 64: 680, 1942.
5. Mahornei, Howard, and Crain, Alfred P. Jr.: Acute hematogenous osteomyelitis, *Ann. Surg.*, 115: 790, 1942.

DISCUSSION

Dr. Rena Crawford (New Orleans): I should like to thank Dr. Aleman for bringing these interesting cases to our attention and congratulate her on the marvelous success she had in treatment of these cases; also on the early diagnosis and the work she did on them.

I read an article by Dr. Dunham which some may remember, some eight or ten years ago in the *Journal of Pediatrics*, in which she summarized the blood stream infections in 39 cases in five years, in the New Haven Hospital. This group of 39 cases had positive blood culture. It was suggested in that paper that if more cultures were taken on the newborn, diagnosis could be made of some obscure diseases which are otherwise missed. Of these 39 cases she reported, before the days of sulfonamides, 30 cases were lost out of the number. Of the 39 cases, 30 of them showed localized lesions and 19 had cutaneous lesions. There were seven lesions from the umbilicus. An interesting thing was that out of seven umbilical infections only three of them were diagnosed clinically and the others were found out at autopsy. There were four cases of osteomyelitis, several

cases of peritonitis and, as I said, most of them died.

About two years ago, at Baptist Hospital, I saw a case of peritonitis. Dr. Stewart and I have this case ready for publication. I was not so fortunate as Dr. Aleman. I saw the baby when 18 hours old and the only thing wrong I could see was distention and failure of bowels to move. There was no fever. No x-ray was made. I thought there was intestinal obstruction and suggested an exploratory investigation. The infant died four hours later. At autopsy it was found that there was ruptured intestinal ulcer about two inches above the cecum. The mother had a normal pregnancy and delivery but the child had an ulcer and died from it.

Dr. Suzanne Schaefer (New Orleans): A discussion of infections of the newborn is of special interest and value at this time. As all of us know, from unfortunate experience, they are more frequent than they have been, and we may expect them to become even more frequent than they are now. The explanation is simple. Our nurseries are overcrowded, our nursing facilities are limited, and both conditions, as the emergency continues, are likely to become even more aggravated than they are at the present time.

For reasons not yet entirely clear, newborn babies are peculiarly susceptible to pyogenic infection, no matter how adequate prenatal maternal care has been, and protection from environmental risks is essential. The strict regulations which have been devised for the nursery regimen are based on a sound rationale, and their observance is extremely important. I am frank in saying that epidemics of infection are not, as a rule, the fault of the nursing staff. All too often they can be traced to some break in technic, often a minor break but nonetheless potentially dangerous, on the part of the attending staff. How easily a minor infection in a single infant becomes a major epidemic with tragic consequences is another event that is also unfortunately well known to us all.

So far as I can determine from a casual review of the literature, less than a dozen cases of osteomyelitis of the newborn are on record. I have never personally seen a case. Under proper management the disease runs a relatively benign course, in contrast to the stormy and chronic course of the same disease in older children and in adults. Osseous lesions and surgical wounds heal rapidly, sinus-formation is readily controlled, and new bone formation is prompt and adequate. The literature suggests, I am sure correctly, that diagnosis is difficult and likely to be overlooked, and Dr. Aleman is to be congratulated on her recognition of the case she has reported.

Another serious disease in newborn children is so-called infectious diarrhea, which is now generally believed to be a manifestation of general

sepsis. Autopsy studies have shown the same pyogenic organism as is found in the gastrointestinal tract, to be present in the respiratory tract, the heart valves, and muscle, and elsewhere in the body, and it is logical to assume that the condition is a primary sepsis rather than that the diarrhea is primary. The mode of dissemination is not yet understood, but the strict isolation of any child with diarrhea is essential to prevent the spread of the disease.

The sulfonamide drugs have revolutionized the management and reduced the mortality of infectious conditions in the newborn, just as in older patients. Impetigo neonatorum and infected forceps abrasions are instances. Formerly such infections were treated by ammoniated mercury, gentian violet and silver nitrate. They were usually controlled, it is true, by these methods, but the course was two weeks or longer. Now by the use of sulfathiazole ointment the course is usually five or six days or even less. Reports on the treatment of more severe rare infections, such as Dr. Aleman has reported, are just beginning to appear in the literature, but there seems little doubt that equally as good results can be expected in them as have been achieved by these methods in the minor infections and in pneumonia.

Finally, I should like to emphasize again that the first principle of both diagnosis and treatment in very young babies is constant observation, based on the realization that in the very young, just as in the very old, the clinical manifestations of any disease are likely to differ materially from the classical picture. The condition of a child with high fever, who is vomiting and diarrheic, is not likely to be overlooked. A child with moderate fever or subnormal temperature, with no gastrointestinal disturbances, who is quiet and apathetic, may be much more seriously ill, and may even die within an incredibly short period, before the fact of his illness, let alone its grave character, is comprehended. Eternal vigilance, in other words, is the price of salvation in the newly born child.

Dr. L. A. Fortier (New Orleans): I would like to congratulate Dr. Aleman on this excellent paper and to discuss the osteomyelitis case. I had the pleasure of seeing the case with Dr. Aleman and Dr. Planche at Hotel Dieu. There was definitely periostitis shown on the x-ray film and we were a little dubious about osteomyelitis at first because it is so rare in children at that age. Aspiration was done, pus found and drain instituted. A few days later the bone changes were very much more marked and definite osteomyelitis was present.

Dr. W. S. Sako (New Orleans): I have been interested in infections for several years. Some time ago in conjunction with the pediatric department, I had the opportunity to study the blood stream of patients admitted for various infec-

tions, taking cultures in order to study the staphylococcus organism. We found that the staphylococcus was a dangerous organism and a very frequent cause of infection. All too often presumption is made that the culture is contaminated and the diagnosis is missed. I have seen cases in which the blood culture has stayed positive in children and adults for several years, and yet the patient remains well for various intervals of time. Then suddenly osteomyelitis breaks out or there is a localized infection. This shows that the staphylococcus can invade the blood stream and remain months and possibly years before the infection is localized or causes symptoms.

Another thing with which one who works with the staphylococcus becomes aware is the fact that many of these strains of organism can produce potent toxin. This was demonstrated to me some years ago when a technician working in a laboratory was scratched on the end of the finger by a rabbit and died within six hours. Three hours before death, the blood culture showed hemolytic staphylococcus. This strain of organism produced a potent toxin, causing death in animals and giving rise to antitoxin.

Since Dr. Aleman has had excellent results with sulfadiazine alone, I would hesitate to recommend any other therapy. However, the administration of antitoxin in these cases merits consideration. Sometimes remarkable results are obtained. A year ago there was a newborn in the Charity Hospital who developed staphylococcus septicemia with osteomyelitis. This baby was very ill and prostrated. Antitoxin was administered and the patient's response was dramatic. Chemotherapy was also used and recovery took place.

Another thing to consider in Dr. Aleman's therapy is whether or not to select thiazole or diazine. It appears that sulfathiazole is superior against staphylococcus in smaller concentrations, up to 5 mg. per cent. When one reaches a concentration of 10 mg. per cent or above, sulfadiazine is just as efficacious. One case I know of in the Charity Hospital with staphylococcus septicemia was given 18 grams of sulfathiazole in 24 hours. The blood level was only 5 mg. per cent. We changed to sulfadiazine and maintained a higher blood concentration with better results. The patient recovered from the septicemia and now has a localized infection in the arm.

Dr. C. A. Stewart (New Orleans): This report of four cases of serious illness in infants with 75 per cent recovery records a remarkable accomplishment. These infants could not have been in better hands.

In a recent conversation I learned that combining urea with sulfonamides was greatly beneficial in the treatment of empyema. This recalls to my mind an article in *Science* to the effect that the inhibiting influence of para-aminobenzoic acid can be diminished by administering urea in con-

junction with sulfonamides. This suggests that urea may be used in the future to augment the beneficial effects of various sulfonamides. Not long ago the treatment of septicemia was limited largely to transfusions, but recently arsenicals, staphylococcus antitoxin, and sulfonamides have been added to the therapy with improved results.

WARREN STONE*

ROBERT GLENN ALLEN
NEW ORLEANS

The name of Warren Stone, an able and beloved teacher in the Medical College of Louisiana from its first session in 1834 until his retirement from active life in 1872, was known throughout the South for almost half a century. As professor of surgery for 35 years, and as surgeon to Charity Hospital for 39 years, Dr. Stone's name is impressed indelibly upon the local history of a remarkable era.

Warren Stone was born at St. Albans, Vermont, on February 3, 1808. He was the youngest of the three children of Peter Stone, a farmer, and Jerusha Snow, a remarkable woman, who undoubtedly was largely responsible for her son's greatness and success. The father died before his son was born, but his mother outlived him, being past 90 when she passed away. His youth was spent very happily on a New England farm far from the nearest school, so the greater part of his early education was received from his mother. This teaching aided him greatly in preparing for the study of medicine, the profession he had chosen in his early youth. His mother encouraged him, and she left no stone unturned in preparing her son for his future training and in seeing to it that he received the best possible medical education. Dr. Stone realized how much his mother had done for him, and in all the years they were separated he kept up his correspondence with her. When he was a sick, old man he made the long journey North to see his mother once more before he died.

After his early training at the hands of his mother, he went to Keene, New Hampshire, to become the private pupil of Dr.

*Read before the History of Medicine Society, Tulane University, February 26, 1943.

Amos Twitchell, who won Warren Stone's affection and imbued him with a special fondness for surgery. He then entered Medical School at Pittsfield, Massachusetts, and in December, 1831, he received his degree.

In 1832, Dr. Stone, then 24 years old, located in West Troy, New York, where he began the practice of medicine. It was in this year that the dread cholera first appeared on this continent among the immigrants in Quebec and Montreal. These immigrants started for the States, as it seems do all people in distress. Early in July several cases of cholera occurred in West Troy, and to the first of these cases Dr. Stone was called late at night. He promptly recognized the new disease. Not many days later the following case occurred, which was narrated by him 35 years afterward in support of an argument against the contagious nature of cholera: "A humane person requested me to see a young man, lying in a pile of lumber, who, he said, appeared very ill. I found him in the collapsed state of cholera. As he was destitute, I obtained an outhouse of the landlord and had him conveyed to it, and stayed with him the greater part of the time for 24 hours, administering his medicines, and even injecting a saline mixture into a vein in his arm. The room was close, but I suffered no inconvenience from contact and confinement." Even though this case was related to prove a controversial point, it will illustrate that philanthropy which was always a foremost principle in his profession and private life.

In the latter part of October in 1832, Dr. Stone left West Troy and turned to the South for his future home. When he embarked in the brig *Amelia* for New Orleans, there were very few cases of cholera in New York. The ship was overcrowded with passengers, and carried a valuable cargo. The story of the voyage is interesting but tragic. Here is the log in Dr. Stone's own words: "For the first four days there was a calm, and everything was healthy; but a terrible storm came, and it was found necessary to fasten down the hatches and stifle over one hundred beings in a small space between a

small ship's decks. I expected serious consequences. The captain, who was willing to do whatever was proper, said that the hatches could not be raised without imminent danger of sinking the ship, a fact which was subsequently verified. On the third day of the storm there was a cry that 'there was a man dead below. The weather having moderated a little, found a deplorable state of things. All seemed stupefied from foul air, and about twenty-five seemed to be in the second stage of cholera. At this period in the voyage, on the 30th of October, the brig, in distress, was beached on Folly Island, off Charleston harbor, and there subsequently, by order of the municipal authorities, the vessel and cargo were burned. The terrifying disease of which these unlucky voyagers were suffering spread great alarm, but pity for their misfortune soon became the prevailing feeling."

The owner of Folly Island, a Mr. Milne, opened his house and all the buildings of the island to care for the unfortunate members of the crew and passengers. Charleston responded at once, and sent physicians, provisions, and everything available to provide for the sick. Dr. Stone remained on the island and worked untiringly to relieve the great suffering all about him. In all this misery, one happy event took place. Dr. Stone met Dr. Thomas Hunt, then of Charleston, who had been commissioned by the authorities to take entire control of the sanitary affairs of the plague-stricken island. These two became fast friends, and Dr. Stone was a great aid to Hunt who planned the Medical College of Louisiana, later the University of Louisiana, and now The Tulane University of Louisiana. Soon Dr. Stone was stricken with the disease and Dr. Hunt became his physician.

When the epidemic had abated, the city of Charleston sent the passengers of the ill-fated brig to their original destination.

So in December, 1833, Stone landed on the levee in New Orleans, a friendless stranger with only one picayune in his pocket. Later he remarked to a friend that the only reason he saved this was for the

sake of preserving a nucleus. Evidently he had given his money away.

Eighteen hundred thirty three! This was a memorable year in New Orleans. Yellow fever was declared epidemic on October 15, and ten days later cholera appeared. Here were two terrible diseases, cause unknown, both spreading through the population like wild fire, the desolution of one disease being eclipsed only by the horrors of the other. The official report of the senior surgeon of the Army in New Orleans states that over 10 per cent of the entire population had cholera. The then new Charity Hospital had just been built, and one can imagine how crowded its wards were.

Into this city of dead and dying people stepped Warren Stone. He immediately offered his services to the hospital and was appointed a supernumerary in the medical department. This was the first of many New Orleans epidemics in which Dr. Stone played a prominent part. In August, 1833 Dr. Thomas Hunt, who had moved to New Orleans, became house surgeon, and the friendship that had begun on Folly Island was renewed. Dr. Hunt in a letter to the Board of Administrators of the hospital used the following words to recommend Dr. Stone for promotion: "It gives me great pleasure to state from my personal knowledge that Dr. Stone is a humane and worthy man, and a well-informed, skillful, and for his age, an experienced surgeon. He is in every respect qualified for the office of assistant house surgeon." Dr. Hunt's recommendation was not cast aside, and in due time Stone was appointed assistant house surgeon to serve with Dr. Harrison who had been elected to succeed Dr. Hunt. Hunt wanted to found a medical college in New Orleans, and resigned to devote all his time to that purpose. Dr. Stone served from 1833 to 1835, and when Dr. Harrison resigned in his favor, he was elected house surgeon. When his term expired in 1839, he was elected a visiting surgeon to the hospital, which position he held until he retired from all active work in 1872.

Charles J. Bickham, a ward student under Dr. Stone has the following to say of

his instructor: "He was methodical and industrious, quick in perception, and prompt in the execution of what he conceived to be his duty in all cases. His thoughts were rapid, and he seemed always to take in at a glance the whole circumstances and details of a case. This kind of knowledge and ready comprehension as to the true state of things in any case was a peculiar and marked characteristic of the man. It is often called intuition. Call it what you will, Dr. Stone possessed this faculty to a marked degree, and appeared always to be ready for any emergency that might arise.

"His resources were unbounded. He never seemed to be taken unawares. His knowledge, tact and ingenuity were equal to the occasion, and he never appeared so cool, self-possessed and grand in his whole nature, physical, mental and moral, as he did in the midst of sudden and alarming emergencies in surgery. He seemed to rather welcome such occasions, and in the midst of the most complicated and difficult operations, cool, calm, and collected, he would promptly do his duty, at the same time lecturing and explaining to those present the minutest practical details of the case. In truth, every visit to the hospital was an ovation to him, which he acknowledged with becoming modesty, but which served to doubly inspire him; and his entire time at the hospital was one constant discourse upon the various diseases and their treatment to those around him. He seemed to realize his capability and that much was expected of him; yet, withal, he was as modest as a woman and appeared oblivious to his good deeds."

In his clinics, he taught the advanced surgery of the old school. He believed in the principles of drainage in suppurative arthritis, in hepatic abscesses, and in pyothorax. He advocated resection of the rib to facilitate the drainage in suppurative pleuritis. He believed strongly in making free incisions, and did so whether in operative work or in the liberation of pus. In surgery of the arteries, he was an expert, and was among the first to cure an aneurysm of the vertebral artery.

All of Dr. Stone's early work at Charity was done without the aid of an anesthetic, and he was indeed ready to welcome the new era in surgery which was about to dawn. In 1846, Jackson and Morton demonstrated publically the use of ether as a general anesthetic. The news of this discovery was not received with favor universally, and many were openly against it. Yet on February 25, in 1847, Dr. Stone amputated the thigh of a man, using ether anesthesia. The operation was performed in the amphitheater at Charity Hospital. A reporter commented favorably, writing in the newspaper: "The operation was entirely satisfactory to all who witnessed it—a thigh had been amputated without pain." This incident illustrates Dr. Stone's independence of action in all medical matters about which he had definite opinions. Chloroform soon became his preferred anesthetic, and he influenced many others to use it.

One of the earliest private hospitals in the United States was founded in New Orleans by Dr. Stone in connection with Dr. William E. Kennedy. It was called the *Maison de Santé*, and when Kennedy retired in 1845, Dr. Stone assumed entire control. The institution was managed prosperously by the Sisters of Charity.

Hotel Dieu was founded in 1859, and the Sisters of Charity went there. The old institution became Stone's Infirmary, and though it was a private institution, medical relief was never refused any applicant. After the war with Mexico, returning soldiers were cared for by the hundreds, and you may be sure not many paid for their treatment. Listen to the words Professor T. G. Richardson wrote in 1861: "It is an established rule of the house never to refuse professional services on the score of poverty of the applicant. And in this connection the writer takes the liberty of saying that the charity thus dispensed by his benevolent colleague, Dr. Stone, incalculable in amount, and unostentatious in its bestowal is of itself sufficient to elevate its author to that high rank among philanthropists which his well known abilities

have long since commanded in the profession which he adorns."

The infirmary was widely known in its day, but in 1867 its doors were closed and the buildings were torn down.

As Tulane men, we are naturally interested in Dr. Stone's connection with the University, which was the most important part of his professional life and work. In the first session of the school in 1834, he was the acting demonstrator of anatomy, in the place of Dr. J. H. Harrison who was ill. The institution was then known as the Medical College of Louisiana. In 1835-36 he was the demonstrator of anatomy, and in 1836-37, lecturer on anatomy. In 1837 he was the professor of anatomy and lecturer in surgery; from May, 1837 to April, 1839 he was professor of anatomy and surgery, and from April, 1839 until his retirement in April, 1872, he was professor of surgery. What a sudden climb! From acting demonstrator on anatomy at the age of 26 to professor of anatomy and surgery at 29.

Dr. Stone was never a systematic teacher, but usually discursive. In a didactic discourse, he would not follow beaten paths; some topic of the day or a recent case he had seen or read of would be the subject of the lecture. Whatever the subject, his discourses were always instructive. His manner as a teacher was earnest and direct, and he held the esteem of his students.

In his travels to Northern and Eastern cities, he occasionally lectured by invitation before medical classes. His topic was usually yellow fever, since it was such an important factor in the South.

Dr. Stone did not like to write. It is said that he realized what a handicap his meager pre-medical education was, though it was the best his mother could give him under the circumstances. The following letter illustrates his disinclination to write. It is taken from the *New Orleans Medical and Surgical Journal*, 1859.

August 29, 1859.

Mr. Editor:

According to promise, I herewith send you a small contribution, which I fear you will think hardly worth publishing. I have

undertaken to give some of my impressions upon an important subject (inflammation), and my method of analyzing it, but find that I have totally failed. I know I have observed much and honestly, but with no object except to learn the right use of medicine; but although my convictions, to me, have all the force of facts, when I come to put them to paper I feel myself in the condition of an ancient philosopher, who, to a difficult question, answered, "If you don't ask me I know, but if you ask me I can not tell." However, good or bad, publish it, and I will continue the subject and try to make something intelligent on the subject of treatment or application of therapeutic agents to pathological conditions.

Very truly, your friend,
Warren Stone.

His most important article entitled "Ligation of the Common Iliac Artery; Use of the Silver Ligature," was published in 1852. In it he states that the silver ligature is preferred because of its "innocuous character."

In 1858 he wrote "Observations on Hernia and Obstruction in the Bowel." The article was published in the *New Orleans Medical and Surgical Journal*. He wrote, "The bowel is in danger from the moment it is strangulated, and should be relieved as soon as possible."

In 1859-60 he wrote the series of articles on inflammation already referred to. He insisted on the necessity of modifying the treatment of disease according to varying pathologic states, and he stated very clearly the conception of the difference in the process by which a clean wound heals primarily, and the true inflammatory process. In his ward teaching and lectures he devoted much time to the subject of inflammation. He believed in venesection in the treatment of inflammation "under certain conditions." There were many others at that time who entertained the same view, so he was not alone in clinging to an old method of treatment. Let it be said, however, that he was a judicious bleeder.

His article "Union by the First Intention and Purulent Absorption" published in 1860

contrasted the American and French methods of treating wounds. The French had one method, and they stuck to it. So it was for the Americans—they would use only one method of treatment—their own. The logical thing to do, according to Dr. Stone, is to use both methods, the French when circumstances indicated it, and the American when other conditions existed. He was a practical man.

His articles were not all confined to surgical subjects. Pulmonary tuberculosis, cholera, and yellow fever were other topics about which he reluctantly wrote, usually at the insistence of his friends.

In spite of his disinclination to write, he was editor of the *New Orleans Medical and Surgical Journal* from 1857 to 1859 and co-editor from 1859 to 1868.

He was well informed in the medical literature of the day, and in his travels both here and in Europe he discussed medical problems with the most eminent men of his times.

It is said that he was a most distinguished diagnostician before the days of instrumental precision. His colleagues marvelled at the accuracy of his observations.

One of Dr. Stone's greatest virtues was his respect for his colleagues. He was gentle and considerate, and would not allow criticism of others when he was present.

Professor Samuel D. Gross called him the "great common in medicine." He liked the lowly as well as the upper class. He preferred a laborer, if intelligent, to a gentleman, if stupid. When he died, the district courts were adjourned as a mark of respect, flags of the shipping stood at half mast, and many of the stores on the main streets were closed at the time of the funeral.

Dr. Stone was a man of unusual wit. If he walked into a club or public gathering with one or two other men, he soon had them laughing heartily at his jokes and clever remarks. Others would draw near to discover what the attraction was, and soon the entire crowd would be around Stone listening to his witty remarks and filling the rooms with laughter.

Men marveled at his intellectual power. Here is what Dr. Stanford E. Chaillé wrote soon after Dr. Stone's death: "It has been my good fortune to have personally known many of the most distinguished men of my time—statesmen and political leaders, soldiers and preachers, lawyers and doctors, and I testify that of all these great and famous men not one of them impressed me as having been endowed by nature with intellectual power equal to that of Dr. Stone."

In spite of having been born and reared in the North, Dr. Stone was a staunch Democrat and an ardent believer in the Confederacy. He was a personal friend of Jefferson Davis and helped "The Cause" in every possible way. However, on no occasion did he condemn others because they did not see eye to eye with him. For instance, he was a great admirer of and often quoted Daniel Webster, who was a Whig. One day a friend asked, "Dr., how is it that you, a Democrat, can admire Mr. Webster so

much?" Dr. Stone replied immediately, "What on earth have my politics to do with my ardent admiration for Webster's great talent?"

He was an accurate and keen observer, whose knowledge of anatomy was superb. He once remarked that people who learned their anatomy from plates and wax models should operate only on the same. Those who knew him said that he was neither a quick nor graceful operator, but was safe and sure.

In the spring of 1872, owing to his failing health, he retired from all active duty. He went North to Vermont to visit his mother. In the autumn he returned to New Orleans suffering from the then incurable diabetes mellitus, and died in his home on December 6, at the age of 64 years.

With the rites of the Catholic Church, the remains were put away in the Cypress Grove Cemetery outside the city of New Orleans.

NEW ORLEANS

Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

C. C. deGravelles, M. D., Ex officio

For one year: Lucien A. LeDoux, M. D., Chairman

H. W. Kostmayer, M. D., Secretary

For two years: James K. Howles, M. D.

For three years: G. C. Anderson, M. D.,
Vice-Chairman

Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D. *Editor-in-Chief*

Willard R. Wirth, M. D. *Editor*

Daniel J. Murphy, M. D. *Associate Editor*

COLLABORATORS—COUNCILORS

Edwin L. Zander, M. D.

J. T. O'Ferrall, M. D.

Guy R. Jones, M. D.

T. B. Tooke, Sr., M. D.

George Wright, M. D.

Rhett McMahon, M. D.

C. A. Martin, M. D.

W. F. Couvillion, M. D.

Paul T. Talbot, M. D. *General Manager*
1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

THE WAGNER-MURRAY BILL

It might be truly said that the opposition to Senate Bill 1161 of Senator Wagner of New York and Senator Murray of Montana, has aroused not only the medical profession but the small business man, the economist and people interested in the welfare of this country.

An editorial in the New Orleans States of October 13, under the caption "Cradle to Grave" discusses this particular Bill not only from the point of view of the doctor but from that of an observer who very

definitely is opposed to the establishment of another bureaucracy. The editorial points out that the man in charge of the bureau would have huge amounts of money to spend, wield enormous political and social influence. There would be created an ever growing nest of bureaucrats who would hold great power over a large part of the population of this country.

Medical care and hospital service that the Bill would set up would demand the socialization of the greater part of private medical practice. The editor further states that socialized medicine has had very scant support in this country. Few favor it, practically none understand what it means and what it implies. It would interfere with one of the most precious freedoms of the American people; it would interfere with the actions of one profession, although the engineer, the chemist, the lawyer, the accountant would continue in his private practice, distributing services for that which their talents would command. The doctor, the editorial said, would have to knuckle down to bureaucrats fixing his remuneration, hours of working, working conditions and so on, all from the fountainhead of the huge bureaucracy which would have to be established.

This editorial in one place facetiously asks why the undertaker's service is not included in view of the fact that the provisions of the Bill cover the individual from the time he is born until he dies. The verbiage of this editorial has been followed very closely but it might not be amiss to quote the exact words of the final two paragraphs which say that "When Senate Bill 1161 is called up for action, the people will want to be on their toes. The way to kill that grandiose, extravagant scheme is to see that each member of Congress hears from his constituents. This is a matter that the whole people should vote upon. It should not be permitted to go on the statute books while large numbers of voters are away fighting for their country, as prohibition was foisted on the people. The voters can cast their "ballots" indirectly by writing their senators and congressmen.

Don't get the notion that your congressman is going to ignore a letter or telegram you may send him stating how you stand with respect to any piece of legislation. He will rarely go against the wishes of his constituents.

"If you do not feel like writing your senator or representative today, be prepared to do it when Senate Bill 1161 is called up."

THE ANNUAL MEETING

A decision has not as yet been reached by the Executive Committee as to whether or not the State Medical Society will conduct an annual meeting with the presentation of scientific papers as well as the business sessions of the House of Delegates. Last year, it will be recalled, the meeting was solely for the transaction of business and at Baton Rouge met the members of the House of Delegates and a few other members of the organization who were interested in the business of the Society.

In common with a fairly considerable number of states, our State Society did not hold a scientific meeting. The experience of these states that did hold such meetings, points rather definitely to the conclusion that while the attendance might not be quite as large as usual due to the many men being in the service, nevertheless a reasonably good attendance was the rule everywhere; nor is this experience unusual. The Southern Medical Association had a goodly number of doctors attending their meeting. The graduate assemblies which are held throughout this country have had large turnouts. As a matter of fact the New Orleans Graduate Medical Assembly had a larger registration by far than ever before. It is to be hoped that the Executive Committee may see its way clear, in view of the knowledge obtained by the attendance at other meetings, that this year the annual convocation will be held in New Orleans.

There are several reasons why the State Society meeting would be held. One of the really important reasons for the meeting is that it will enable the doctor, who is now laboring under forced pressure and to a degree which is almost unbelievable, to get

away for a few days of rest and the exigencies of practice. It will give him a breathing spell, as it were, and allow him to come back refreshed and revived by his change of environment and through the contact with his fellow practitioners. Another advantage of holding an annual meeting is that the doctor will have the opportunity of becoming acquainted with new ideas and to brush up on his knowledge of medicine in all its aspects. Lastly, it might be pointed out that there are innumerable doctors in the armed forces stationed near New Orleans and throughout the State of Louisiana who could advantageously attend the meeting as guests of the State Society. All in all it is our belief that scientific meetings, except on a very large and grandiose scale and which are attended by thousands of men, should be continued. Officials in charge of transportation have requested that these very large meetings not be held on account of the difficulty of travel but on the other hand they have encouraged the small meetings so that scientific interest in medicine might not be entirely abolished during the war.

THE TREATMENT OF RESPIRATORY TRACT INFECTIONS IN CHILDREN

The respiratory tract infections, from the common cold to pneumonia, are the commonest disorders as a group that are treated by the practicing physician. Many statistics have been prepared which confirm this statement. In adults, respiratory tract infections are responsible to a greater degree for morbidity than any other cause of sickness. This results in a tremendous loss of time from work, disturbs the care of the house and the children in the instance of the mother, as well as sometimes producing permanent anatomic damage or causing death. In youth there is a greater degree of absenteeism from school as result of these infections than any other one cause. Particularly severe may be the infections in childhood because while the average adult or young person is able successfully to combat infection, in the small children

and in infants these infections may terminate in death.

Janeway,* assistant professor of pediatrics at Harvard Medical School, discusses the use of the sulfonamides in infections of the breathing passages of children. He predicates his remarks with the statement that sulfonamide drugs should not be used indiscriminately but that it is extremely difficult to know just what type of infection the doctor is dealing with who treats children in their homes. He says he can hardly blame doctors for using these drugs almost indiscriminately because in many cases they are definitely of value and that furthermore to ferret out the etiologic agent is often fraught with great difficulties.

Respiratory infections are due to two types of agents: viral and bacterial, frequently the two acting as one. Sulfonamides are effective against almost any type of bacterial infection but are "singularly ineffective against the virus agents that often pave the way for the bacterial infection, or may be the sole cause of the infection." Apparently Janeway's rule is to judge of the severity of the infection and whether or not it is spreading before even considering the sulfonamides. In milder infections, such as the common cold, the child does not have a high fever and is not markedly toxic and does not appear severely ill. The leukocyte count is of great help; virus infections are not accompanied by a high white cell count, bacterial infections do produce a leukocytosis, but the leukocyte count is by no means conclusive. If the child then appears severely ill, Janeway's philosophy, as he expresses it, is to take the bull by the horns and give the sulfonamides a trial. If this decision has been arrived at then give the child adequate dosage. Unless chemotherapy is intensive it should not be employed at all. Abortive attempts at treatment may cause toxic reactions or the child may become sensitized and will be in trouble in case the drug might be re-

quired for truly serious infection later on. He advises that having determined to give the drug, promptly to examine the urine and keep on examining it regularly while treatment is being carried out. It is advisable, when possible, also to watch the blood count.

Of the various sulfonamide preparations, sulfadiazine is probably the most satisfactory, not only when given by mouth but the sodium salt can be given parenterally. It is very unlikely that sulfadiazine will produce disturbances in the child. The dosage is of importance. Janeway recommends that the physician start off promptly with adequate dosage and warns against the danger of first giving too little and then starting to give larger doses which may bring about toxic reactions. The dosage that he recommends is one grain per pound of body weight for the first 24 hours if there is serious infection. To the seriously ill child one-half to three-quarters of the daily dose should be given initially, that is, three-fourths of a grain per pound and then the grain per day per pound divided into either four or six doses to be continued until the dosage can be reduced to half a grain per pound for two days after the temperature has fallen. This amount is continued for a few days more until the child's infection is well under control. Sodium sulfadiazine, 5 per cent solution, may be given under the skin by clysis or it may be done with a syringe. This method naturally is of great value when the child is vomiting.

In the discussion of his paper it was asked why, in view of the general belief that many children are being saved from otitis, mastoiditis, bronchitis and pneumonia by the sulfonamides, they should not be given routinely. Janeway points out that to be effective a certain blood level has to be obtained and when sulfonamides are given in small doses their effect is probably minimal and that the great majority of upper respiratory tract infections subside spontaneously without complications. Other reasons for not using the sulfonamides in every instance have already been mentioned.

*Janeway, Charles A.: The use of sulfonamides in the treatment of respiratory infections in children, *New England J. M.*, 229:201, 1943.

ORGANIZATION SECTION

The Executive Committee dedicates this page to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

NOTICE TO ALL PARISH AND DISTRICT MEDICAL SOCIETIES

At the special meeting of the Executive Committee of the Louisiana State Medical Society held October 1, the inactivity of some of the component medical societies was discussed. A recommendation was made as follows:

"That it is the sense of the Executive Committee that there should be a revival of interest by parish and district medical societies, which they regard as essential to the survival of medicine; and that the Secretary of the Society write a letter to these societies urging that they have regular meetings."

Some of our societies have voted to disband during the period of the War. During these trying times, which have so materially affected the practice of medicine in this state as well as other states, our Executive Committee feels that there should be a continuation of medical activity in the various parish and district societies. At these meetings opportunity should be given for the liberal discussion of the grave problems that confront the medical profession today, so many of which are vital to our very existence. Some of these problems you have no doubt realized, especially after reading your medical periodicals and the editorials appearing in the last two or three issues of the New Orleans Medical and Surgical Journal. These editorials you will find in the Organization Section.

It is, therefore, hoped that your organization will co-operate to the fullest extent with the Executive Committee in this regard.

Most of our medical organizations in the metropolitan centers find many grave war problems to necessitate their continuance of their meetings. However, we feel that the doctors outside of these congested points

should have the privilege of meeting, discussing, and planning. In our rural areas more so than in the cities there may arise an acute shortage of doctors and dislocations which might impair the fullest and best character of medical services. These gaps should be prevented, or where occurring promptly corrected. These problems should be discussed and brought to the attention of the state officers for aid. It is generally believed among the best informed, that unless we have further calls on the medical profession of this state by the fighting forces, that good medical care can be maintained. Six thousand more doctors in the United States are needed in the armed forces by 1944, but fortunately for Louisiana we are told by the State Committee on Procurement and Assignment that no further call this year will be made on the physicians of Louisiana. We, therefore, should husband our present medical resources and try to see that they are properly used, extended, and diverted for proper care of the needy in areas where adequate medical care is most needed. This is a big job, but the physicians of Louisiana are used to big jobs, and I am sure capable of meeting these emergencies. They have the envious tradition which inspires one to the opinion that in the final analysis they will do a good job.

ACTIVITIES OF THE EXECUTIVE COMMITTEE

The Executive Committee of the Louisiana State Medical Society has been most active since the last state meeting. They have held three meetings, during which time they have disposed of routine business and gave consideration and discussion to important war medical problems. As a result of this, very shortly it would appear that some definite counterplan will be prepared to meet the requirements of the public and physi-

cians in regard to services for maternity cases and children for families of enlisted men. This had been proposed by the Children's Bureau of the Federal Government. Now it is not a very easy task to assimilate a definite and precise plan to meet the indigenous demands being made in these proposals. Far reaching principles are involved necessitating cautious and pertinent study of the subject to prevent any imposition on medical practice. At the same time we become motivated by the apprehension of being called unpatriotic which often becomes a means of defeat and some failures. This problem has been given serious study by the special committee and the executive officers.

Another problem will soon be thrown in the laps of the Executive Committee for determination. It concerns the establishment of a quarantine building by the Louisiana State Board of Health or the United States Public Health Service at Charity Hospital in New Orleans to treat, cure, and possibly rehabilitate the infected female contacts suffering from venereal disease. From best information this is a part of the venereal control program of the United States Public Health Service to decrease the incidence of infection of the boys in camps and industrial areas. You may be assured that the best interest of the public and profession will be preserved by the Executive Committee in their deliberations, but it will call for profound thought and study to establish this program to the satisfaction of all concerned.

SENATE BILL NUMBER 1161

What are you doing to help to defeat this atrocious measure? Is it any wonder that the medical profession becomes alarmed and jittery every time some plan is pro-

posed by the Federal Government and especially the United States Public Health Service. In view of the revolting and revolutionary provisions in the bill, and destruction of the American form of practice, can you blame the medical men for being skeptical about any other proposal under the guise of war necessity which might in reality have many virtues? Every doctor in this state has now had the opportunity of forming some definite opinion about this bill. You have been importuned through your journals, both state and national, in the form of editorials and factual data; various pamphlets have been sent you by the National Physicians Committee or other groups; the press and even the radio has contributed information by appeals or round table discussions. The lay public is being awakened to this octopus whose giant tentacles seductively camouflaged with patriotic war paint are motivated and primed for the final kill. You can help to forestall this measure if you have faith in your professional form of practice. Personal letters to your two senators and to the representative from your respective district in Washington will produce the best results. These congressmen shy at resolutions from groups, but they listen attentively to the protests of their individual constituents. So do inform yourself about this bill if by chance you have missed the opportunity, then write. Furthermore, have your friends and civic organizations to do likewise. We will be very glad to send any accumulated data that we may have for your or their information. Never before has the future of American medicine been so jeopardized. We must fight to preserve our American way of life and practice as we see it. This is as vital on the home front as it is on the battle line. So do write now.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

AMERICAN FEDERATION FOR CLINICAL RESEARCH

The New Orleans section met in June 1943, at the Louisiana State University Medical Center, 1542 Tulane Avenue. Abstracts of the program follow:

The Role of Congestive Heart Failure in the Production of the Edema of Acute Glomerulonephritis. (John S. LaDue, M. D.—From the Department of Medicine of the Louisiana State University School of Medicine and the Charity Hospital at New Orleans.)

Twelve patients admitted to Charity Hospital with acute glomerulonephritis complicated by peripheral edema were studied according to the following plan.

Patients were placed upon strict bed rest and given no medication except magnesium sulfate to control convulsions. Four patients were given a low protein, low salt diet; four a high protein, low salt diet; and four the regular house diet. There was no restriction of fluids, but the intake and output were charted. Daily measurements of the venous pressure, circulation time, blood pressure, weight, and degree of pulmonary, liver or peripheral edema were recorded. Frequent teleoroentgenograms and electrocardiograms were made, the urine was examined at least twice a week and blood urea and phenolsulfonphthalein excretion tests were done. On one patient, the vital capacity was measured every other day. The heart area and diastolic heart volume were determined from the teleoroentgenograms according to the method of Keys and Friedell. It was possible to secure edema fluid from two patients and total protein determinations were done on these fluids. Blood proteins and albumin-globulin ratios were determined for each patient.

Ten of the 12 patients had had an upper respiratory infection with cough, coryza and sore throat 10 to 21 days before the onset of their symptoms of glomerulonephritis, but in two patients no history of a preceding infection could be elicited.

Swelling of the face and legs was the chief complaint except in one child who was brought into the hospital because of convulsions. Nausea and vomiting occurred once and headache twice. Seven patients complained of dyspnea and orthopnea on admission and in three others it was noted on physical examination.

The neck veins were frequently engorged and rales were heard at the bases of both lungs in nine patients. Pleural effusions were encountered in four patients. The heart was markedly enlarged in eight patients and moderately enlarged in the remainder. The apical impulse was forceful in all patients and a systolic thrill was felt in three. The heart rate was above 110 in all but two instances. A systolic gallop rhythm was heard in four patients, but no other irregularities in rhythm were encountered. The pulmonic second sound was louder than the aortic second sound in the hearts of 11 of the 12 patients. The diastolic blood pressure was above 100 mg. mercury at some time during the first two days in every instance; the systolic blood pressure was 190 or more in five patients, but was 130, 135, 138, 145, 150, 165 and 180 in the remainder. The liver was enlarged in seven patients and ascites was noted twice.

The eye-ground findings were of interest. In two patients arteriovenous nicking was the only finding, in five patients it was associated with local lumen attenuation. In one patient a few pin point

hemorrhages, as well as arteriovenous nicking and arteriolar spasm, were seen.

Hematuria was always present on admission and persisted until discharge in a few patients. Albuminuria was present in 10 patients and cylinduria in six. Elevation of the blood urea content was noted twice and in each instance the level fell to normal when the patient became compensated. The same two patients had a transient lowering of phenolsulfonphthalein excretion to 55 per cent which rose to 70 per cent or more before discharge.

Using the severity of heart failure as a basis for separation, the patients divide into three groups. Group I had no symptoms of congestive heart failure except edema, although the venous pressure was elevated in all. In Group II, in addition to edema and elevated venous pressure, there was moderate to marked dyspnea and orthopnea. Group III had such severe signs and symptoms of congestive heart failure that the administration of digitalis was thought necessary.

In Group I, the circulation time was above normal only in one patient. A drop in blood pressure preceded the fall of venous pressure and disappearance of edema in all three patients, but in two patients the blood pressure was nearly normal before the venous pressure fell to 10 cm. of water (upper level of normal).

Teleoroentgenograms taken on admission and after signs of congestive heart failure had disappeared showed a decrease in the diastolic heart volume in two patients of 95 c. c. and 82 c. c. Diuresis and weight loss occurred over the critical period. Hematuria, as might be expected, was the last abnormality of the disease to disappear in these patients.

In Group II, the venous pressure was elevated in every instance and rose further upon right upper quadrant pressure, but none of the patients had prolonged circulation time. In all but one patient, an initial fall in blood pressure slightly preceded the clearing of congestive heart failure and the fall of venous pressure to 10 cm. of water or lower, but the exact time relations are not as clear cut as in the first group of patients. In four patients a significant decrease in the diastolic heart volume (130 c. c., 46 c. c., 118 c. c. and 164 c. c. respectively) was found at the time compensation was considered complete. One patient did not have a second teleoroentgenogram taken until two weeks after compensation was complete; at this time the diastolic heart volume had diminished by 85 c. c. There were weight loss and diuresis during the critical periods. Albuminuria and cylinduria were more pronounced in this group but hematuria persisted for approximately the same length of time as in Group I.

In Group III, three of the patients had ascites and pleural effusions in addition to marked findings of edema, dyspnea, orthopnea, liver engorgement and pulmonary rales. One of the patients was given Cedilanid intravenously, two took usual amounts of *folia digitalis* orally and all received

maintenance doses of 0.05 to 0.1 gram of folia digitalis daily.

In three patients the signs of congestive heart failure disappeared and the fall in venous pressure occurred before any significant alterations in blood pressure were observed. The blood pressure in one patient who had mitral stenosis fell before failure disappeared. In this patient, the mild attack of acute glomerulonephritis probably precipitated the severe congestive heart failure. The diastolic heart volume of another patient diminished 118 c. c. before compensation was complete. Two patients did not have x-rays taken until 32 and eight days respectively, after disappearance of the signs and symptoms of heart failure, but at this time a decrease in the diastolic heart volume of 100 c. c. and 357 c. c. had taken place. The transverse diameter of the heart of another patient had decreased 1.0 cm. in three days, according to a careful physical examination.

DISCUSSION

There appears to be a close correlation between the time of disappearance of congestive heart failure complicating acute glomerulonephritis and the time of occurrence of the initial fall in blood pressure, since the fall in blood pressure preceded the disappearance of the signs and symptoms of heart failure in seven of the eight patients who were not given digitalis. In three of the four patients who were digitalized, the blood pressure remained high for some time after the establishment of compensation. These facts appear to strengthen the suggestion of the etiologic importance of the blood pressure in the pathogenesis of the heart failure of acute glomerulonephritis, since it is well known that digitalis acts to decrease the diastolic heart volume and increase the mechanical efficiency of the failing human heart whatever the cause of the failure.

Measurements of the diastolic heart volume made within two weeks after compensation was established (the third teleorentgenogram) showed a further decrease in the diastolic heart volume of four patients. The finding of low to normal circulation times in all but one of these patients with acute glomerulonephritis, despite their elevated venous pressure, has not been reported before. This has been noted in heart failure due to beriberi and has been ascribed to diminished capillary resistance. No explanation, however, is offered for the decreased to normal circulation time seen in our patients. The pulmonic second sound was accentuated in 11 of the 12 patients, suggesting the possibility of a pulmonary hypertension.

CONCLUSIONS

1. The edema of twelve patients with acute glomerulonephritis was found to be associated with right heart failure as indicated, in every instance, by an elevated venous pressure and cardiac dilatation.

2. In nine patients most of the symptoms of congestive heart failure were present, but in three patients the presence of peripheral edema was the only symptom suggesting heart failure. More careful study of these three patients disclosed cardiac dilatation and elevated venous pressure.

3. The importance of hypertension in the pathogenesis of and relief of the congestive heart failure which frequently complicates acute glomerulonephritis has been emphasized. The earliest objective evidence of improvement of the heart failure in seven of eight patients not given digitalis was a fall in blood pressure; the return to normal of the venous pressure and the disappearance of edema occurred slightly later.

4. There was a significant decrease in the diastolic heart volume of these patients after compensation had been established. This decrease was even greater two to four weeks after congestive failure had disappeared.

5. The circulation time was normal or low in eleven of twelve patients studied, despite an elevation of the venous pressure.

6. The pulmonic second heart sound was accentuated in 11 of 12 patients, suggesting the possibility of pulmonary hypertension.

A Renal Concentration Test Employing Posterior Pituitary Extract. (H. T. Engelhardt, M. D., and W. A. Sodeman, M. D.—From the Departments of Medicine and Preventive Medicine, Tulane University, School of Medicine and Charity Hospital of Louisiana, New Orleans.)

The renal concentration test employing posterior pituitary extract is based upon the renal action of this substance, which has been shown to inhibit water diuresis, as well as increase the chloride excretion. Not only is there a decrease in urinary volume, but an increase in the concentration of solids in the urine. This action takes place in spite of the ingestion of water, so that previous preparation of the patient by fluid restriction is unnecessary.

After the subcutaneous administration of 10 units of posterior pituitary extract, specimens are collected at the end of the first and second hours. In normal individuals, at least one of the specimens will show a specific gravity of 1.022, or more.

The dosage of posterior pituitary extract used does not affect the blood pressure. Hypertension is not a contraindication to the test. The extract causes coronary constriction and should be used with caution in angina pectoris. Acute coronary occlusion, sensitization, and late pregnancy are contraindications to its use.

The test is simple, requires only minimal cooperation by the patient, particularly as far as fluid restriction is concerned, and can be carried out immediately, without preparation of the patient, at any time of day. It is particularly indicated in edematous patients where other concentration tests are inaccurate because of diuresis. Furthermore, it

is of value in surgical patients where restriction of fluids is contraindicated.

THE MEDICAL DIVISION OF CHARITY HOSPITAL

The regular monthly meeting of the Visiting Staff of the Charity Hospital was held October 19, 1943, in the Auditorium of the hospital. There were three interesting cases presented: The first one of remarkable splenomegaly due to reticulo-endotheliosis by Dr. J. H. Musser; the pathologic aspects of this case were fully discussed by Dr. Palik. The second case was presented by Dr. S. Chaillé Jamison with Dr. Jane Matthews-Day, showing an unusual case of tularemia. The last and final case was shown by Dr. J. S. LaDue and was one of the rather unusual types of cases, namely Loeffler's syndrome.

SOUTHERN BAPTIST HOSPITAL

The regular monthly meeting of the Baptist Hospital was held on October 26. On the program were two presentations; the first was an address by Mr. Allard Kaufmann, Service Director of the American Red Cross Blood Donor Center. The scientific paper was presented by Dr. Howard Mahorner on "Resection of the Colon."

SOCIETY FOR EXPERIMENTAL BIOLOGY AND MEDICINE

A meeting of the Southern Section of the Society for Experimental Biology and Medicine was held on Wednesday, October 27, 1943, at 8:00 p. m., in the Richardson Memorial. The program was as follows:

1. Adrenal Cortical Changes Following the Administration of Adrenal Cortical Extract in Guinea Pigs Receiving M. L. D. Doses of B. Welchii Toxin—Drs. Bjarne Pearson, Maxwell Kepl, Guy Caldwell, (by invitation), and Alton Och-

ner, Department of Pathology and Surgery, Tulane University.

2. Fatty Material in Acid-fast Bacteria Revealed by Staining With Sudan Black B.—Kenneth L. Burdon, Ph. D., and Carl Lamanna, Ph. D., Department of Pathology and Bacteriology, Louisiana State University.
3. Measurement of the Rate of Insensible Perspiration (diffusion fraction) Locally, Through Living and Dead Human Skin—Drs. G. E. Burch and Travis Winsor (by invitation), Department of Medicine, Tulane University.
4. A Study of the Relative Influences of the Various Layers of Human Skin Upon the Rate of Diffusion of Water—Drs. Travis Winsor (by invitation) and G. E. Burch, Department of Medicine, Tulane University.
5. Excystation, Cultivation and Encystation of *Endamoeba Coli*—Miss M. Frances Mayfield, (Introduced by Dr. E. C. Faust), Department of Tropical Medicine, Tulane University.
6. Chronic Diarrhea Associated With Bacillus Paratyphosis Infection and Small Intestine Changes (Slides)—Drs. D. N. Silverman and A. V. Friedrichs (by invitation), Department of Pathology, Tulane University.

To Be Read By Title

1. Momentary Atrial Electrical Axes in Paroxysmal Tachycardia—Drs. George Decherd, Arthur Ruskin, and George Herrmann, Department of Medicine, University of Texas, Medical Branch.
2. The Effect of Sodium Pentobarbital on Hemocentration—Drs. Raymond Gregory and Paul L. Ewing, Department of Medicine, University of Texas, Medical Branch.
3. Studies on Guinea Pigs After Repeated Administration of Paraldehyde—Emmett B. Carmichael, Ph. D., Dr. F. A. Kay, and G. W. Phillips, Ph. D., Department of Chemistry, University of Alabama.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

- | | | | |
|----------|--|----------|---|
| November | 2. Board of Directors, Orleans Parish Medical Society, 8 p. m. | November | 8. Scientific Meeting, Orleans Parish Medical Society, 8 p. m. |
| | Eye, Ear, Nose and Throat Staff, 8 p. m. | November | 10. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m. |
| November | 3. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m. | | Clinico-pathologic Conference, Marine Hospital, 7:30 p. m. |
| | Mercy Hospital Staff, 8 p. m. | | Touro Infirmary Staff, 8 p. m. |
| November | 4. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m. | | Women's Auxiliary, Orleans Parish Medical Society, Orleans Club, 3 p. m. |
| | Executive Committee, Baptist Hospital, 8 p. m. | November | 15. Hotel Dieu Staff, 8 p. m. |
| | | | Clinico-pathologic Conference, Baptist Hospital, 8 p. m. |

- November 16. Charity Hospital Medical Staff, 8 p. m.
- November 17. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Charity Hospital Surgical Staff, 8 p. m.
- November 18. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- November 19. I. C. R. R. Hospital Staff, 12:30 p. m.
- November 23. Baptist Hospital Staff, 8 p. m.
- November 24. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.
French Hospital Staff, 8 p. m.
- November 25. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- November 26. L. S. U. Faculty Club, 8 p. m.
New Orleans Hospital Dispensary for Women and Children Staff, 8 p. m.
- November 30. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

During the month of October the Society held two meetings—one regular scientific meeting and one special meeting. The following program was presented at the regular meeting:

Ephedrine Sulfate in the Treatment of Enuresis, by Dr. W. E. Kittredge.

Dr. Roy E. de la Houssaye opened the discussion. New and Important Applications of Carbon Tetrachloride in Medical Therapy, by Dr. George Fasting.

Dr. Clyde Brooks opened the discussion. The following program was presented at the special meeting:

Management of War Casualties at the Front, Colonel Rex L. Diveley, U. S. Army Medical Corps, Orthopedic Consultant of the American Expeditionary Force.

Colonel Diveley showed two colored motion pictures covering care of American war casualties and methods of treatment and rehabilitation; also tracing the bombing mission over enemy territory.

NOTICE

Nominations for Officers of the Society and Delegates to the Louisiana State Medical Society must be handed to the Secretary on or before the November meeting (Monday, November 8, 1943); nominations cannot be accepted after 9 p. m. the night of the November meeting.

Dr. John H. Musser attended a meeting of the committee on essential drugs and medical supplies of the National Research Council in Washington.

Dr. W. A. Sodeman recently delivered a series of lectures on nutrition to the physicians and staff of the Santo Tomas Hospital in Panama. Dr. Sodeman also made daily ward rounds at the Santo Tomas hospital as a part of the graduate program carried out under the auspices of the Panamanian Government.

Dr. E. Carroll Faust has recently been honored by the College of Physicians of Philadelphia with the Alvarenga Award for outstanding contribution to the study of medicine. The award, named in honor of the distinguished Portuguese physician, will be presented this month.

Dr. Clarence Steele presented a paper on Tinnitus Aurium and Dr. Thomas Findley presented a paper on Syncope at the October clinical staff meeting of the Ochsner Clinic.

At the October meeting of the Mercy Hospital staff Dr. Chris Bellone presented a paper on Utero-Sacral Ligament Shortening and Prolapse.

Lt. Col. I. M. Gage was recently ordered to the Fourth Service Command Headquarters at Atlanta, where he will assume the duties of Consulting Surgeon with the Fourth Service Command.

Lt. Col. Roy H. Turner has been transferred to the Lawson General Hospital at Atlanta.

Lt. Col. Charles B. Odom has been decorated with the Order of the Silver Star. The presentation was made by General George S. Patton, Jr.

Carol P. Cabibi, Mervin E. Fatter and Norton W. Voorhies were recently promoted from first lieutenants to captains.

Z. J. Romeo was recently promoted to the rank of major. Major Romeo is in foreign service.

Daniel J. Murphy, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

SENATE BILL 1161

If we study the system of American Government as formulated in Washington today, we can see a definite trend toward socialization of many businesses and professions, particularly in our own profession. An effort is being made now through the Wagner-Murray Bill (Bill No. 1161) to provide, without cost, not only general medical but special medical care, as well as laboratory and hospital benefits to practically all of our citizens.

This is an old problem and has come up several times in the last few years in our legislative bodies. The calling of so many of our doctors into the Armed Services has depleted our civilian care of the sick in many areas. There are areas today that are without doctors or with doctors reaching the age when they can no longer carry the increased burden placed upon them. Again, many of our areas have had a large influx of population due to war industries and a much larger burden again is placed on the doctors in these areas. These conditions have brought more forcibly to the attention of some the need for medical services, hence the Wagner-Murray Bill.

To meet these pressing demands and to enable a greater number of people to obtain medical care and hospitalization, which they could not otherwise afford, various groups have formed hospital insurance plans under the Blue Cross at a very nominal cost. As an example, here in New Orleans, approximately 115,000 people carry hospitalization insurance.

The following States have formed a statewide medical plan now in operation: California, Massachusetts, Michigan, New Jersey, Pennsylvania, and Utah. In addition, two other States—Delaware and North Carolina—are now offering policies covering medical services. Thirty-nine counties of New York State have medical plans with an enrollment of something over 30,000 policy holders. Fourteen counties in North Carolina with an enrollment of 15,000 have their headquarters at Durham. Dallas and Kansas City also have plans to take care of the low wage income group in their section. These groups should at least be given the opportunity to prove that medical services can be carried on an

insurance basis before any radical changes are made by the Government.

The Wagner-Murray Bill now goes all the way and proposes to give medical care, free, or at a nominal cost, to all of our citizenry. What effect would this bill have on our profession? Would it cause the practice of medicine to deteriorate? Would it ruin the finest medical service in the world and would it deprive the average American of the excellent service he receives from our profession today? If we take the history of other countries, our only answer would be that the type of service now rendered would greatly deteriorate. Again, it is highly impracticable and unworkable, in my opinion, to set rules and standards for medical treatment or to try to regulate the relationship between patient and doctors that would answer the purpose in other sections of our country, because conditions are widely different. This Bill negates the right of the profession to maintain its present legal and social position. American medical aid at its best is what the public seeks and must have. Our profession is interested in the preservation of health and the saving of life according to the high standard that has been founded after years of long and intelligent studies and efforts to give the maximum that is humanly possible to give. The American public is not interested in a minimum of advice or prescription—he wants and demands the best of service to which he is accustomed.

There should be no question as to the right and freedom of any individual to enter the profession, or to the patient seeking medical aid, or for any State to legislate for the legitimate practice of medicine. The question is how to make competent medical service available to all who might be in need. Medicine should not and must not be handled as a business or a trade, for it is a profession in spite of the fact that the Supreme Court rendered a decision that it was a trade. The profession means work to the men and women who dedicate their lives to serving others, whose skill has been developed after long years of hard work and under prolonged and exacting training. No professional man who enjoys the respect of his

community operates for profit only. Naturally, his living is made by his work, but his services are given untiringly to benefit others and not himself. All work solely for the individual sufferer, with only one objective in view and that is to solve his problem and restore him back to health and normal life in the shortest possible time.

The doctor, except those in public health service, does not serve the masses. His service is a contract between the patient and himself and if he should be called upon to serve in an emergency or a general calamity this is a service beyond his ordinary call of duty and is given through his own free will and his desire to help his fellow human. We doctors have always prided ourselves in our training and our service. The Government might provide the training freely, but under no circumstances or conditions would it ever be able to provide the ambitions and sacrifices and the devotion to one's fellowmen as the ideal professional man possesses it today. Nor could Government demand that whole-hearted untiring attention to the patient which is most certainly an outstanding mark of our profession.

The Wagner-Murray bill as written would certainly create a new class of political doctor and, as we all know, political classes in America are subject to the common influence of political practice, seeking rewards and avoiding burdens as well as shirking duties. Of course, there are exceptions, but they are a rarity. The system as it operates does not elevate personal ideals, and surely doctors without personal and professional ideals are not worthy of the title "Doctor."

The bill would assign certain sections of the population to certain doctors, and this would certainly destroy all personal relationship of doctor and patient. It may even go as far as to have the confidence of the patient in his doctor destroyed. No longer could the attention be given to a patient as it is done in private practice today, and the patient would be subjected to routine treatment and advice. At least this is the experience gained from State medicine as practiced in other countries.

Again, what would become of research and in-practice studies. It is almost inconceivable that all doctors would spend days, weeks, and months in experiments, in reading the latest findings of the profession during his leisure hours in trying to improve his technic when there was no reward in sight for his efforts. Again, who could expect doctors to face the dangers, risks and untold sacrifices that are ever present in the following of his profession. The doctors who are real representatives of their profession seek as their reward their good name and unquestionable reputation among their fellows and among their present and prospective patients.

This Bill would kill the incentive most doctors have to make the most of their abilities and natural gifts and would place the laggard and disinterested ones on the same plane and level with

the studious and ambitious. Any Government controlled system which would tend to lower these high standards of our profession would most certainly be a detriment rather than a help. We must not destroy the incentive and ambition always to improve one's self, and regimentation, as I see it, can have this effect only.

The financial aspects of the Bill are as follows: The Bill provides that:

- a. Sec. 960—Every employer shall pay a tax on wages paid to individuals (up to \$3,000 per year) of..... 6%
- b. Sec. 961—Every employee shall pay a tax, deducted from wages on earned income, up to \$3,000 per year, of..... 6%
Total from payrolls..... 12%
- c. Sec. 963—Every self-employed individual shall pay a tax on the market value of his services up to \$3,000 per year, of..... 7%
- d. Sec. 962—Federal, State and municipal employees (under certain conditions) shall pay a tax of..... 3½%

It has been estimated by the Treasury Department that, broadening the base of Social Security taxpayers and beneficiaries, as above outlined—with existing rates (total 5 per cent) would raise \$5,000,000,000.00 of revenue annually. On this basis the total annual revenue from Bill 1161 rates would be twelve billion dollars (\$12,000,000,000.00).

The Bill provides (Section 969) the establishment of a trust fund to be known as "Federal Social Insurance Trust Fund." Into this fund all Social Security taxes would be paid—\$12,000,000,000 annually.

The Bill provides: (Section 913)

- a. There is hereby established within the Trust Fund a separate account to be known as "The Medical Care and Hospitalization Account;"
- b. The managing Trustee shall credit to this account—
 - 1. One-fourth of the contributions paid, in accordance with sections 960 and 961 respectively, of this Act.
 - 2. Three-sevenths of the contributions paid, in accordance with Sections 963, 964 and 965 respectively, of this Act.

In such manner, on the basis of the above estimates, a minimum of three billion dollars (\$3,000,000,000) each year would be transferred from the Trust Fund to the Medical Care and Hospitalization Account.

The Bill provides (Section 907):

- a. The Surgeon General shall publish a list of institutions found by him to be participating hospitals.

(The term "participating hospitals" means an institution found by the Surgeon General to afford professional service, personnel,

and equipment adequate to promote the health and safety of individuals customarily hospitalized in such institutions and to have procedures for the making of such reports and certificates as the Surgeon General and the Social Security Board may from time to time require.

(The term "hospitalization benefit" means an amount, as determined by the Surgeon General after consultation with the Council and after approval by the Social Security Board; not less than \$3 and not more than \$6 for each day of hospitalization, not in excess of thirty days, which an individual has had in a period of hospitalization; and not less than \$1.50 and not more than \$4 for each day of hospitalization in excess of thirty in a period of hospitalization; and not less than \$1.50 and not more than \$3 for each day of care in an institution for the care of the chronic sick.)

How much is three billion dollars? What can be done with it? What can be accomplished? The potential can be understood only by comparisons.

For the ten year period from 1924 to 1938, both years inclusive, the total revenue of the Government of the United States, from all sources, was \$35,412,944,412—or an annual average of \$3,541,294,441.

For the five year period beginning April 1, 1931 to March 31, 1935 the total revenues of the German Government were \$15,725,840,000. This represents an average total income at the rate of \$3,145,168,000 per year.

In 1940 the total expenditures of the Japanese Empire were \$1,999,773,180. \$1,150,000,000 of this amount was appropriated to carry forward the China War. Non-war expenditure totaled \$849,773,180.

In 1938 the total expenditures of the pre-war Government of France for all purposes were \$3,130,777,635.

Senate Bill 1161 provides for placing in the hands of one man a sum three times the amount of the normal non-war expenditure of Japan and approximately equal to the pre-war expenditure of the Government of the French Republic.

It is estimated that, at the present time, there are in the United States, available for civilian practice, 120,000 effective physicians. With three billion dollars the Surgeon General could—

- a. Allocate 20 per cent for administration costs \$ 600,000,000.00
- b. Hire every effective physician in the United States at an average salary of \$5,000 a year..... 600,000,000.00
- c. Buy every available bed in every non-government owned hospital (368,046)

365 days each year (134,336,790 hospital bed-days) at \$5.00 per day.....	671,683,950.00
d. Pay \$2.50 per day for each and every government owned hospital bed (1,051,781) 365 days in the year (383,900,065 hospital bed-days)	959,750,162.50
e. Spend for drugs and medicines	168,565,887.50
	<hr/> \$3,000,000,000.00

In addition to the above:
The Bill provides (Section 1111):

"For the purpose of encouraging and aiding the advancement and dissemination of knowledge and skill in providing benefits under this Act and in preventing illness, disability, and premature death, the Surgeon General is hereby authorized and directed to administer grants-in-aid to non-profit institutions and agencies engaging in research or in undergraduate or postgraduate professional education.

"For the purpose of this subsection there shall be available, for each calendar year beginning with the calendar year 1944, an amount equal to 1 per centum of the total amount expended for benefits from the Trust Fund, exclusive of unemployment insurance benefits, or 2 per centum of the amount expended for benefits under Title IX after benefits under that title have been payable for not less than twelve months, whichever is the lesser, in the last preceding fiscal year.

"Such grants-in-aid, in such amounts and for payment at such times as are approved by the Surgeon General, shall be certified for payment by the Social Security Board to the Managing Trustee, who shall pay them from the Trust Fund to the designated institutions or agencies."

Assuming that out of the \$3,000,000,000—\$600,000,000 is spent for administration and \$2,400,000,000 is paid out in benefits—and that this measure is taken—the Surgeon General would have 2 per cent of this sum or \$48,000,000 each year, to spend for medical education and medical research.

With the amount available, the Surgeon General could—

- a. Assume the total costs of operating the 66 accredited medical colleges in the United States.....\$21,491,248
 - b. Subsidize 22,000 medical students to the extent of \$700 per year for a period of four years 15,400,000
 - c. Spend for other research each year
- | | |
|--|--------------------|
| | 11,108,752 |
| | <hr/> \$48,000,000 |

or

a. Duplicate all existing medical teaching facilities	\$22,000,000
b. Pay 20,000 additional medical students \$700 per year during the period of training.....	14,000,000
c. Otherwise spend	12,000,000
	<hr/>
	\$48,000,000

Val H. Fuchs, M. D.,
New Orleans

N. A. C. D. S.

The following resolution was adopted by the National Association of Chain Drug Stores at Board of Directors meeting held on September 9, 1943:

Whereas there has been introduced in the Senate of the United States Bill No. S-1161, having for its purpose the amendment of the Social Security laws of the United States, to provide for a system of Federally controlled medical service;

And whereas this Association believes that at a time when the whole energies of the nation are being devoted to the waging of a global war for the preservation of democratic institutions, and when a large proportion of the medical profession is unselfishly devoting itself to the furnishing of medical care to the forces at the battle front, risking not only their lives and health but their possible future financial security, it is neither fair nor democratic to propose so drastic a change in the practice of medicine.

Now, Therefore, be it resolved that the Board of Directors of the National Association of Chain Drug Stores urge upon the Congress of the United States to take no action upon this Bill until after the end of the present conflict and after the return to their private practice of the doctors now in the military service of their country so that they may have an opportunity to present their views.

FOURTH DISTRICT MEDICAL SOCIETY MEETING

The Fourth District Medical Meeting was called to order, after dinner served in the dining room of the Shreveport Charity Hospital, by Dr. J. P. Sanders, the President, on October 5, 1943.

We were very happy to have Dr. DeGravelles, our state society president, with us. He discussed briefly the pending Wagner-Murray Bill which he stated would regiment all the members of the medical profession. He thought that the bill had a good chance of passing because it had the blessings of Mrs. Eleanor Roosevelt and the powerful Labor Unions.

He stated that American doctors have given their patients the best brand of medicine the world has ever seen and that this will all be destroyed by political medicine whose leaders are usually picked by their political amenability rather than by ability.

He suggested that the doctors of the State should and must become familiar with this bill and then talk it before civic groups and other groups of people to familiarize the public with it as most people believe it is something for nothing. These people should be made to realize that it means another deduct of 6% from their wages and that the cost of living must rise to compensate for the corresponding 6% the employer is required to give. If the doctors continue to sleep they will awaken to find this bill saddled to their backs.

Dr. DeGravelles further pointed out that one of our State Senators was for this bill and that the doctors and those they could influence should express their views by letter to their legislators in Washington.

The Scientific Program was given by Dr. Rawley M. Penick, Jr., Assistant Professor of Clinical Surgery of Tulane University. The topic of his paper was "Lessons from War Surgery." His talk considered in detail the treatment of shock, in which he stated that we in civilian practice were not using large enough quantities of blood plasma. He further discussed and compared the treatment given by civilian doctors and doctors of the armed forces for wounds in general, those of the face, head, chest, heart, intra-abdominal, extremities and burns and pointed out lessons we could learn from the armed forces' experience.

The discussion was opened by Lieutenant Mitchell of the U. S. Naval Reserve Medical Corp. He gave some very interesting experiences of care of the wounded under battle conditions which he could speak about from first hand experience. The paper was further discussed by Captain Cooper of the U. S. Army Medical Corps, Dr. D. A. Huckabay and Dr. R. K. Womack.

The annual election of officers of the Fourth District Medical Society was then held and the following were elected for the coming year: President, Dr. W. R. Harwell; Vice-President, Dr. W. R. Mathews; Sec-Treas., Dr. J. D. Youman; Delegate, Dr. J. M. Bodenheimer.

J. D. Youman, M. D., Sec'y.

SECOND DISTRICT MEDICAL SOCIETY

The Second District Medical Association met at the home of Dr. P. A. Donaldson, Reserve on Thursday, Sept. 30th. Those present were: Drs. Massony, Sharp, Paul Landry, Clayton, Kelly, Guillotte, Katz and Councilor O'Ferrall. Guests from New Orleans were: Drs. Harrison, Alsobrook, Cole and Connely. At this meeting was held the inauguration of the new officers: Dr. P. A. Donaldson, President; Dr. J. J. Massony, Vice-President; Dr. R. A. Kelly (to replace Dr. Waide who died in office) as Secretary-Treasurer; Dr. J. W. Atkinson, Delegate; Dr. P. P. La Bruyere, Jr., Alternate Delegate. A very pleasant meeting was held followed by a delicious supper served by Mrs. P. A. Donaldson.

VERNON PARISH MEDICAL SOCIETY

The physicians of Vernon Parish met in Leesville on October 7, 1943, at 8:00 p. m. and organized the Vernon Parish Medical Society. The following officers were elected and installed: Dr. William Marvyn Johnson, President; Dr. William E. Reid, Vice-President; Dr. Edgar M. Shaw, Secretary-Treasurer.

The first Thursday of each month was designated as the regular meeting date for the society. Such an organization was formed in 1903 and disbanded in 1936.

LOUISIANA STATE UNIVERSITY
MEDICAL SCHOOL

Dean B. I. Burns of the School of Medicine of Louisiana State University, announces the following promotions and new appointments on the medical school staff, effective with the opening of the 1943-1944 session:

Promotions—Department of Anatomy: Dr. R. N. Baillif, from Instructor to Assistant Professor. Department of Medicine: Dr. R. H. Bayley, from Assistant Professor to Associate Professor; Dr. Alice B. Holoubek, from Assistant to Instructor; Dr. Louis A. Monte, from Clinical Assistant Professor to Clinical Associate Professor. Department of Obstetrics and Gynecology: Dr. Rupert E. Arnell, from Associate Professor to Professor; Dr. R. F. Phillips, from Clinical Assistant to Clinical Instructor. Department of Physiology: Dr. Walter S. Wilde, from Instructor to Assistant Professor. Department of Pediatrics: Dr. Joel Fleet, from Second Year Resident to Instructor. Department of Surgery: Dr. John L. Dileo, from Fourth Year Resident to Instructor.

New Appointments—Department of Anatomy: Dr. Donald Duncan, A. B., Carleton College, M. A. and Ph. D., University of Minnesota, to the position of Professor of Anatomy. Dr. Duncan comes to Louisiana State University from the University of Texas, where he was Associate Professor of Anatomy from 1932-41 and Professor of Anatomy from 1941-42; Dr. William Lane Williams, B. S., Wofford College, M. S., Duke University, Ph. D., Yale University, to the position of Assistant Professor of Anatomy. Dr. Williams was formerly associated with Yale University School of Medicine as an Instructor in Anatomy; Dr. Clarence Edward Klapper, B. A., Union College, M. A. and Ph. D., from Cornell University, to the position of Instructor in Anatomy. Dr. Klapper has been associated with Hobart College for the past five years.

Department of Biochemistry: Dr. Lionel Robert Rykkan, B. A. and Ph. D., University of California, to the position of Instructor in Biochemistry. Dr. Rykkan was a Teaching Assistant and a Research Associate at the University of California from 1940-1943.

Department of Nursing Education: Miss Cecilia Perrodin, B. Ed., Superior State Teachers' College, M. S., Catholic University of America, to the full-

time position of Assistant Professor in the Department of Nursing Education. Miss Perrodin was formerly connected with the Nursing Education staff in a part-time capacity.

Department of Pathology and Bacteriology: Dr. Gretchen Vitter Squires, M. D., Louisiana State University School of Medicine, to the position of Instructor; Dr. Rudolph Marshall, Jr., M. D., Louisiana State University School of Medicine, to the position of Assistant; Dr. Pliny Arunah Allen, M. D., Harvard University School of Medicine, to the position of Assistant.

Department of Physiology: Dr. Frederick Palmer Ferguson, B. A., Wesleyan University, Ph. D., University of Minnesota, to the position of Instructor. Mrs. Alice I. Gremillion, A. B., Mt. Holyoke College, M. S., Louisiana State University, to the position of Assistant.

Department of Surgery: Dr. James Samuel Newton, M. D., Iowa State University, to the position of Instructor.

Dean B. I. Burns of the Louisiana State University School of Medicine was in attendance at the annual meeting of the Association of American Medical Colleges which was held in Cleveland on October 25-27. He will also represent Louisiana State University at the Centennial Celebration of Western Reserve University at Cleveland on October 28.

Dr. Theodore J. Dimitry, Director of the Department of Ophthalmology, will address the Thirtieth Annual Fall Clinical Conference of the Oklahoma Clinical Society on Thursday, October 21, in Oklahoma City. His subject will be Diagnosis from Ocular Symptoms. Dr. Dimitry goes to Oklahoma City from Fort Worth where Friday, October 15, he addressed the Fort Worth Eye, Ear, Nose, and Throat Society on the subject of Recent Advances in Ophthalmology.

NEWS ITEMS

Surgeon A. B. Wight has been ordered to the Marine Hospital, New Orleans, as has Surgeon Sidney Immergut. P. A. Surgeon M. M. Greenbaum has been sent to the Public Health District No. 4 in New Orleans. Asst. Surgeon Mayo L. Emory has been relieved from duty in New Orleans and sent to the Public Health Service Medical Center, Hot Springs, Arkansas.

Dr. Charles F. McKhann, who has for several years been on the faculty of the University of Michigan, has resigned from that institution to accept a position as Assistant to the President of Parke, Davis and Company. Dr. McKhann will devote his time entirely to the scientific activities of the company. He will assume his new duties October 15.

The third nation-wide competition for the Schering Award is now open. Three major prizes of a total value of \$1000.00 will be awarded to undergraduate medical students who submit the best critical dissertations on the subject "Hormones and Cancer". As in previous years, the Judges for the Schering Award will include outstanding American investigators in the fields of endocrinology, medicine and chemistry.

Dr. H. W. Kostmayer and Dr. J. H. Musser attended the yearly meeting of Association of American Medical Schools in Cleveland, Ohio, October 25-27, 1943.

THE NEED FOR PROTECTIVE SERVICES IN TIME OF WAR

Rumors that civilian defense is no longer necessary have recently been spread by irresponsible persons. These rumors are thoughtless or calculatingly subversive for they are not supported by Army Authorities responsible for our coastal defenses nor by the present military situation, writes Dr. George Baehr.

Fortunately, the success of our armed forces overseas has saved us thus far from experiencing the horrors of enemy bombing to which the cities of our Allies are being subjected. In the opinion of the best military authorities our coastal areas and industrial centers will not be free of the danger of enemy attack from the air nor of widespread sabotage until the last day of the war.

Civilian defense is needed also as one of the essential measures for safeguarding internal security. This is especially true of the Emergency Medical Service. If we had not created a nation-wide organization for civilian defense two years ago, we would be obliged to organize one today for home security. Disasters of all kinds have increased because of the tremendous speeding up of our great industries, the overburdening of our railroads, and the inexperience of hundreds of thousand of new war workers. Our police, our fire departments, our public works and utility services, and our hospitals, upon which we depend for protection, are being increasingly depleted of trained personnel.

We must, therefore, strengthen our voluntary protective services throughout the land. Along the Pacific, the Atlantic, at its Gulf coasts these services must be especially strong in volunteer personnel and equipment to guard us against the hazards of enemy attack and sabotage until that day when the Army, itself, advises us that the danger is ended.

MEDICAL AND SURGICAL RELIEF COMMITTEE OF AMERICA

A recent gift of sedatives by the Medical and Surgical Relief Committee is but a small part of

the medical equipment requested by the War Shipping Administration's Medical Division in New York. To War Shipping Administration representatives serving in various foreign ports, the Committee has donated 16 large emergency medical field sets, at a cost of \$140 each. Specially designed by the Committee's medical board, the field set consists of 2 valise-sized cases, for use by doctors for wounded and ill merchant seamen. Its drugs, antiseptics, bandages, sutures, syringes and minor surgery instrument roll equip it for an emergency, Dr. Hoguet pointed out.

Medical supplies in strategic ports are often scarce, yet merchant seamen landing there, either as injured or sick crew members or as shipwreck survivors, need on-the-spot treatment. This emergency care is what the Committee's set provides. Carefully packed for immediate use, the sets are portable, and can be carried directly to where the casualties are.

Conducted for over 3 years, the Medical and Surgical Relief Committee is dedicated to supplying medical and surgical aid to the armed and civilian forces of the United Nations. To date, over \$572,000 of drugs, instruments, serums, vitamins and other equipment have been distributed to maritime and military units of America and her Allies, to needy hospitals, war-zone welfare agencies and to civilian defense posts throughout the free world. "So far," declared Dr. Hoguet, "not one request from a reputable source has been turned away . . . and our donations have circled the globe."

HEALTH OF NEW ORLEANS

The Bureau of the Census, Department of Commerce, reports that for the week ending September 11 there was a gratifying decline in the number of deaths in the City of New Orleans, 111 as compared to 145 the previous week. Seventy-two of these deaths occurred in the white population and 39 in the colored. There were nine deaths in children under one year of age. For the week closing September 18, 126 deaths were listed, 80 of these being in the white and 46 in the colored of the community. Twelve of the deaths were in children under one year of age. The deaths in New Orleans for the week ending September 25 were exactly the same as they were two weeks before, a rather remarkable coincidence. There were exactly the same number of deaths in the white population and the colored population as the two weeks prior to this week. One hundred and thirty-one citizens of New Orleans died during the week of October 2. These were recorded as occurring 85 in the white and 46 in the negro population. A surprisingly large number of infants died this week, the total being 19. For the week terminating October 9 there occurred 108 deaths, 66 of whom were white

and 42 colored. Of the infant deaths 11 were in the white and three negro children. For the corresponding week the three year average showed figures of 127. The City of New Orleans is doing itself proud in the reduction of its mortality rate.

INFECTIOUS DISEASES IN LOUISIANA

For the week ending September 11, the weekly morbidity report of the Louisiana State Board of Health showed there were recorded the following reportable diseases in numbers greater than 10: 44 of food poisoning, 31 of pulmonary tuberculosis, 24 of typhoid fever, and 12 of bacillary dysentery. There were also listed three cases of poliomyelitis, six cases of typhus fever, and three of undulant fever. The typhoid fever cases were quite generally scattered throughout the state except at St. Landry Parish with six cases. There was a very sharp increase in the number of cases of pulmonary tuberculosis, a greater number being reported during the week of September 18 than for many months. Seventy-nine of these cases were listed, followed in order of frequency by 17 of malaria, 11 each of bacillary dysentery, typhoid fever, and typhus fever. The four cases of poliomyelitis reported this week came two from Orleans Parish, one from St. Landry, and one from Vermilion. Six of the cases of typhus fever reported were from Orleans Parish, and not more than one from any other parish. St. Landry Parish with five cases was the only parish to report more than two cases of typhoid fever. For the week which closed September 25, there were reported 28 cases of pulmonary tuberculosis, 22 of measles, and 12 of typhus fever. There were four cases of poliomyelitis listed this week, and seven cases of typhoid fever, none being reported from St. Landry Parish and not more than one from any one parish. Typhus fever, which is approaching frequency of typhoid fever, had five cases reported from Caddo Parish and two each from Rapides, Avoyelles and Orleans. For the week which closed October 2, the monthly status of venereal diseases are reported. During the month of September there were 2,789 cases of syphilis, 1,963 of gonorrhea, and 89 of chancroid. There were also listed 45 cases of pulmonary tuberculosis, 11 of bacillary dysentery, and 10 of typhus fever. Only one case of poliomyelitis was recorded this week. There were six cases of malaria found in the state and 13 of unclassified pneumonia. Eight hundred and thirteen of the cases of gonorrhea, 547 of the syphilis cases were reported from military sources.

DR. ALLEN W. MARTIN

(1882-1943)

The many friends and colleagues of Dr. Allen Walker Martin were deeply disturbed to hear of his relatively sudden death on October 6. Dr. Martin

for several years had been vice-chairman of the House of Delegates of the Louisiana State Medical Society, and at the recent business meeting of the organization was made chairman of this body. He had always taken a very active interest in the affairs of the State Society and well merited this important position. In addition to his activities in the field of medicine, he was active also in civic, political and social affairs in Washington Parish. He served as coroner of the parish for four years. He was active in the B. P. O. E. and in other fraternal and civic organizations. Dr. Martin's family was decidedly medically inclined. Two of his brothers are practicing in Louisiana.

DR. PATRICK H. FLEMING

(1890-1943)

Dr. Patrick Henry Fleming, St. Martinville, was born in St. Martinville, Louisiana on February 26, 1890. He graduated in medicine from Tulane University in 1911, and has practiced in St. Martinville since then. He was for many years Secretary-Treasurer of the St. Martin Parish Medical Society; was President of the Third District Medical Society for one year, and Secretary-Treasurer of that organization for two years. Dr. Fleming died on September 29, 1943.

WOMAN'S AUXILIARY

The Woman's Auxiliary to the Ouachita Parish Medical Society held their monthly meeting at the Frances hotel. Mrs. P. L. Perot presided and introduced Dr. Gallaspy, president of the Ouachita Parish Medical Society who gave an interesting talk on blood plasma. Hostesses on this occasion were, Mrs. Mahr, Mrs. William Bendel and Mrs. DeWitt Milam. The following members were present: Mrs. D. M. Moore, Mrs. W. L. Bendel, Mrs. John Pracher, Mrs. R. W. O'Donnell, Mrs. Irving Wolff, Mrs. F. C. Bennett, Mrs. Clifford Johnson, Mrs. A. D. Tisdale, Mrs. P. L. Perot, Mrs. G. T. Gallaspy, Mrs. H. V. Collins, Mrs. E. G. Calvert, Mrs. A. G. McHenry, Mrs. B. E. Barham, Mrs. C. P. Gray and Mrs. A. L. Peters.

Thanks Ouachita Parish. We are glad to know of the work you are doing and your fine cooperation. Reports from auxiliaries are still conspicuous by their absence. I am sure other auxiliaries are busy doing things that would be of interest to all of us, and I should like to have some news from them to report.

Mrs. M. C. Wiginton,
Press and Publicity Chairman.

BOOK REVIEWS

Surgical Physiology: By Joseph Nash, M. D. Springfield, Charles C. Thomas, 1942. Pp. 496. Price, \$6.00.

This book has been written with the purpose of presenting "simply and briefly those aspects of physiology which are of especial importance in surgery." In this respect it meets a need which has been rapidly developing.

The text is divided into seven sections; the first three dealing with the circulatory, respiratory, and alimentary systems, the fourth with body fluids, the fifth with endocrine glands, the sixth with the cerebrospinal nervous system, and the seventh with the autonomic nervous system. At the end of the book a representative list of references are placed alphabetically.

The subject material is up-to-date, fairly comprehensively considered, and written in a simple concise, and explicit style. The significance of a thorough concept of physiological principles in surgery as well as in internal medicine is increasingly evident. For this reason this book will be of particular value to internes and surgical trainees, but even those interested in other fields of medicine will find it useful.

MICHAEL DEBAKEY, M. D.

Clinical Parasitology: By Charles Franklin Craig, M. D., M. A. (Hon.), F. A. C. S., F. A. C. P., D. S. M. and Ernest Carroll Faust, M. A., Ph. D. 3rd Ed. Philadelphia, Lea and Febiger, 1943. Price, \$9.00.

The increased importance of tropical and parasitic diseases on the stage of present world history has made the new and revised edition of Craig and Faust's *Clinical Parasitology* a timely one.

In bringing the subject matter up to date, page margins have been reduced, thus allowing for considerable increase in new textual matter, maps, charts and figures without increasing the total number of pages. Apparently a lighter weight paper has been used which has reduced the overall size of the book.

The organization of the material is based upon that of the second edition. The technical information is divided into five sections: (1) Protozoa and Protozoan Infections; (2) Helminths and Helminthic Infections; (3) Arthropods and Human Disease; (4) Technical Appendix and (5) The Literature of Clinical Parasitology.

By way of introduction to the five sections there is an excellent general introduction in which the authors define the field which they will discuss together with important technical terms. The course of parasitic infections, the routes of migrations of parasites through the body, the reproduction of parasites, the damage produced in the tissues by parasites, the signs and symptoms of the diseases produced, the differential diagnosis, therapeutics,

methods of control and geographical distribution of human parasitic diseases are discussed in broad and general terms. It is recommended that this material be reserved for serious thought and study by the student only after the textual matter has been completely digested. Following this general discussion is an outline giving important dates and events in the history of the development of human parasitic diseases.

Finally there is a brief statement on the "basis and significance of binomial nomenclature." The statement, "The present day scientific names of animals, . . . date back to the days of Linnaeus, who first used binomial nomenclature for a given species", is misleading, for the binomial system of zoological nomenclature was in use before the time of Linnaeus.

Section I: The treatment of protozoa and protozoan diseases has been greatly enhanced by the inclusion of 24 either new or re-done figures, one table on the prevalence of amebiasis in the Western Hemisphere, four color plates of the malarial plasmodia and a new chapter on the Sarcosporidia and Toxoplasma. Figure 10, showing the cysts of common protozoa of man, figure 28 on the geographical distribution of the leishmaniasis, figure 40 on the distribution of Gambian and Rhodesian trypanosomiasis, and figure 70 on the distribution of malarial fevers, are especially fine. The reviewer, being familiar with the splendid colored original of figure 10, so painstakingly executed by Miss Nadene Denison, feels it is regrettable that the chart was not reproduced in its original color.

On page 71 the differential diagnosis between *Endamoeba histolytica* and *E. coli* is said to be "easily" accomplished by reference to morphologic characteristics in table 3. This is true for specimens with clear-cut characters; but the authors surely would concur in the statement that the differential diagnosis of these species is by no means a cut and dried matter, and that time and time again it is very difficult even for the highly trained technician to distinguish *E. histolytica* from *E. coli* as well as *Endolimax nana*, *Iodamoeba bütschlii* and *Dientamoeba fragilis*. It might have been well, particularly for beginning students of parasitic diseases and medical technicians, to have incorporated a precautionary statement to the effect that differential diagnosis of the common amoebae of man, especially the cystic stages, involves an intimate and personal knowledge of the natural variation of each species, acquired only after long and patient examination of many forms.

Four protozoan parasites, namely, *Eimeria clupearum*, *Eimeria sardinae*, *Plasmodium wilsoni* and *Toxoplasma gondii*, are discussed for the first time.

Section II. The section on helminths and helminthic diseases has been augmented by the addition of eleven new figures. Figure 105, showing

the NIH anal swab, should be helpful to physicians in the diagnosis of pin worm infections.

The geographical distribution of *Strongyloides stercoralis* is said to be primarily in warm countries (p. 247) and sporadically in temperate zones. Unpublished data of the reviewer indicate this worm is fairly common among inhabitants of Central Kentucky.

Five helminths, *Plagiorchis philippinensis*, *P. javanensis*, *P. muris*, *Inermicapsifer cubensis* and *Mesocestoides variabilis*, are discussed for the first time.

Section III. The section on Arthropods and Human Disease has been revised and a considerable amount of new material has been added. Of the eleven new figures, figure 233 on the distribution of the rickettsial diseases, figure 258 on the distribution of yellow fever and figure 281 on the distribution of plague, are particularly valuable. As a helpful complement to the text, new diagrams of the transmission cycles of endemic and epidemic typhus (fig. 259) and of plague (fig. 282) have been made. A key for the identification of adults and larvae of anopheline mosquitoes and a chart giving comprehensive biological and epidemiological information on mosquitoes concerned in transmission of yellow fever are other new features of the text.

A welcome addition to this section is the amplified treatment of tick, mite, louse and mosquito-borne diseases. To those users of the second edition the extended treatment of these diseases in the third edition will complete the over-all picture of disease and transmitting host as it relates to man.

On page 537 the methyl bromide technic is mentioned as a method for delousing of clothing and bedding. Methyl bromide, widely used as a fumigant in the control of pests on grains, has recently been found to be highly efficient for killing the nits and adults of human lice. Since it has come into wide usage in mass disinfestation procedures, it might have been appropriate in this work to have elaborated on the technic. It is now possible to utilize methyl bromide in bags for sterilizing clothing and other equipment in field operations.

In outlining the general procedure for the disinfesting of individuals, it is recommended on page 537 that hair be shaved. This practice, of course, results in an uncomfortable condition when the hair begins to grow out, and initially is time-consuming. A new liquid insecticide spray is now available to the military forces which obviates the necessity for barbering and which destroys both nits and adults of lice. This liquid is sprayed on pubescent areas of the body and allowed to dry after the individual has showered and dried.

Section IV. The technical appendix embodies laboratory methods and procedures for the collection, preparation and identification of protozoa, helminths and arthropods. The two new features of this section will undoubtedly be of value to the

physician: (1) Table 11 on diagnostic criteria of important parasitic disease of man; (2) Table 12 on recommended treatment of important parasitic diseases of man.

Section V. The literature lists on clinical parasitology have been enlarged to include references to most of the more important recent papers. The reviewer has, on occasion, found it disconcerting to find a citation in the text which had been omitted in the lists of references.

The third edition of Clinical Parasitology is relatively free from typographical errors. Errors were noted on the following pages: 7, 41, 51, 438, 502.

The book is attractively printed and bound. There is judicious use of bold face type. The text is well written and presented in a clear, strong and logical manner.

As a basic reference work for beginning students and practicing physicians, and as a comprehensive handbook for sanitarians and physicians both civilian and those engaged in protecting the health of our Armed Forces, this third edition of Craig and Faust's Clinical Parasitology is recommended without reservation.

DAVID RICHARD LINCICOME, PH. D.

Housekeeping Service for Chronic Patients: An Analysis of a Service for the Chronically Sick and the Infirm Aged Operated by the Works Projects Administration: By Marta Fraenkel, M. D. Published by The Welfare Council of New York City, 1942.

The study reported by Dr. Fraenkel in this book was undertaken by The Research Bureau of the Welfare Council of New York City at the request of the Advisory Committee of the Housekeeping Service for Chronic Patients. This service which is defined as: "the use of housekeeping aids in the home care of chronic patients without expense to the patient", was initiated in October, 1935, as a W. P. A. Project. At the end of five years of activity, a survey of the project was thought advisable to: (1) Provide information which would be required in making future decisions in regard to establishing the service on a permanent large scale basis; and (2) suggest needed modifications in the service as then operated. A nine months' period, October 1, 1939, to June 30, 1940, is described, with comprehensive statistical data, analysis, and interpretation, as to the patients served and organization and administration of the project. Summary and conclusions, as well as other parts of the study, although related to a specific project, are of general medico-social interest and value in these days of tremendous increase in magnitude and complexities of the field of geriatrics.

NIRNA E. MEAD.

Charles Aloysius Luzenberg, 1805-1848: A History of Medicine in New Orleans during the years 1820 to 1848: By A. E. Fossier. Reprinted from

the Louisiana Historical Quarterly, Vol. 26, pp. 91, (January) 1943.

Dr. Charles A. Luzenberg, a graduate of Jefferson Medical College, came to New Orleans in 1828 as House Surgeon of Charity Hospital. He married an affluent widow in 1832 and went to Europe to continue his medical education. In 1834 he returned to New Orleans and immediately projected himself into the social, professional and political life of the metropolis. Dr. Luzenberg became associated with many scientific, cultural and political activities. He built and managed a very successful hospital (Franklin Infirmary), was one of the leading spirits in founding in 1834 the Medical College of Louisiana—now Tulane School of Medicine; though only for a very brief period, he was the school's first Professor of Anatomy and Surgery and its second Dean. He was an administrator of Charity Hospital, a member of the Medical Board of Censors, president and founder of the Society of Natural History and the Sciences, president of the Philharmonic Society, Alderman of the first municipality, director of the New Orleans Drainage Company, and more. As a surgeon and physician he was skillful and brilliant. However, his love of publicity caused him to tolerate newspaper reports of some of the more spectacular feats on his scalpel. This breach of medical ethics the Physico-Medical Society of New Orleans could not countenance. An especially lurid newspaper story of an operation on the eye of Seminole Mary precipitated the expulsion of Dr. Luzenberg from the Physico-Medical Society. The event was marked and followed by many public notices, charges and recriminations. The scandal, aired with abandon and gusto, involved many distinguished physicians.

Dr. Fossier's account of Luzenberg's stormy career is a dispassionate one, and the life story represents a somber yet interesting phase of the medical history of New Orleans.

CHARLES MIDLO, M. D.

The Sight Saver: By C. J. Gerling. New York, Harvest House, 1943. Pp. 202. Price, \$2.00.

The purposes of this interesting volume are: (1) To inform the public and the medical profession about the simpler problems involved in sight conservation; (2) to debunk some of the many current eye rackets. These cost the American public millions of dollars and no small amount of permanent sight loss yearly.

Under the caption, "Beautifying the Eyes," the author discusses in a clear and conservative manner the effects of mascara, eye lash dyes and growers, as well as the merits of ophthalmic hygiene intelligently used.

Eye exercises are discussed at some length, and are correctly classified as useful and useless. The former, called "orthoptic training," are designed better to coordinate the functions of the extra-

ocular muscles and vision. They are employed by ophthalmologists when of sufficient value to justify the expense of time and money involved. Eye exercises used under the pretext of curing organic diseases of the eyes or permanently correcting optical defects are properly classed as useless, and are fundamentally harmful. All of these exercises are basically designed especially for the more suggestible or neurotic, and they all more or less cleverly attempt: (1) To overcome fear of not being able to see, (2) to increase the urge to see better momentarily; (3) to develop visual memory. Honestly used, they can at least temporarily be of some help to some patients. Unfortunately, they have usually been misused, and infer curative action in incurable conditions. They have become a racket which milks the more neurotic eye patients of their dollars without giving them anything in return except possibly a few psychic highballs.

All physicians will profit by reading this concisely written book of some two hundred pages.

CHARLES A. BAHN, M. D.

Managing Your Mind: You Can Change Human Nature; By S. H. Kraines M. D., and E. S. Thetford. New York, The Macmillan Co., 1943. Pp. 374. Price, \$2.75.

The ideas, exposed in this ambitious book, endeavor to explain to what extent man can control and direct his actions, thoughts and feelings. When there is no proper outlet, for emotions which have been stimulated and for physical responses which have been aroused, a state of tension is created and this often presents itself in physical symptoms. The fact that there is no physical basis for many manifestations of illness does not make them less real or less disturbing but it does mean that you cannot expect your physician to cure you unless you change from within. And only when the causes of mental illness are elicited and properly and adequately dealt with can you hope for permanent relief.

An important thesis set forth is that man is a total organism, his physical and his psychological conditions being only different aspects of the one totality. Dr. Kraines is unusually well qualified to discuss the topics presented in this volume.

The chapters on Emotional Thinking, Tension, Symbolic Symptoms, Sex and Marriage are especially good. In section eighteen, Changing Social Nature, the reader is told that standing in the way of the development of objective emotional stability, for society as for the self, are two obstacles: external threats and internal attitudes. The external threats are the hardships that threaten man's existence; lack of food and other essentials and war which intensifies physical problems and adds the danger of sudden destruction. The second set of obstacles includes the attitudes of men and nations. Probably no other social attitudes are more far reaching, in their detrimental effects, than are lust

for power; lack of formulated and planned idealism; vacillation in action; sadistic (fear induced) treatment of minority groups; and passive acceptance or savage condoning of evils existing within the social organism. Here also, one reads that children need to be taught principles and technics of thinking and of emotional control.

When I become discouraged, over the plight of the human race and the enormous social forces involved in attempts to change human nature, I have doubts that it can be done and that efforts in this direction will prove wholly inconsequential. My first thoughts and desires were to differ with some of the authors' statements and to offer criticism. My only regret is that I had to read the book in order to review it. It would be much easier to disagree with Doctor Kraines if I had not read it. However, I am certain that this treatise is an important contribution to the study and understanding of the mind.

C. P. MAY, M. D.

History of Surgery: By Richard A. Leonardo, M. D., Ch. M., F. I. C. S. New York, Froben Press, 1943. Pp. 504. p. Price, \$7.50.

"The First History of Surgery in the English Language" is the phrase printed upon the blue jacket of this 504-page volume. Fresh from the Froben Press, this history relates the story of surgery from the Neolithic to the Modern Age, comprising 33 chapters, 100 full-page illustrations, 58 pages of finely-typed bibliography, and 36 pages of addenda.

The subject, surgery, has long attracted medical writers, as this present volume's bibliography indicates. However, with the exception of John Shaw Billings' noted monograph, "The history and literature of surgery", published in 1895 in Dennis' System of Surgery, Dr. Leonardo states that "no large scale history of surgery has appeared in English." His labor therefore has resulted in a valuable and ready reference, one that the author tells us will be companioned by a volume, now being prepared, that will narrate "in a strict, dictionary arrangement" the lives of outstanding surgeons of the ancient and modern worlds. For this reason, the present work contains no portraits.

To be commended is the book's excellent format, pleasing typography, chapter sequence, divisions and subdivisions, capitalization of names with birth and death dates, well-selected quotations, a concise and simple style of expression with a happy elimination of superfluous adjectives and a strict regard for the presentation of facts and many of them. The 100 plates grouped at the end of the book are fine reproductions of title pages and anthologies and first editions, many of the fifteenth and sixteenth centuries, and with illustrations of antique surgical procedures and instruments.

Days, months, even years of leisure hours and of devoted labor have gone in the making of this work

wherein is reflected the author's own absorption in a subject of unlimited scope and fascination. Evident also is an understanding that the principal value of any history is its practical usefulness to others. The unusually extensive bibliography containing more than 1000 references is in itself a contribution of value. Special emphasis has been made on American Surgery and Military Surgery, as well as surgical specialties, surgical societies, and surgical literature, in addition to the chronology of surgical discoveries and the men who were responsible for them. Undoubtedly such a book is destined for popularity among students, surgeons, and writers. The author, who spent many years at the surgical clinics of Europe, has dedicated his volume to his teachers at the Royal College of Surgery of Edinburgh.

VERA MOREL

Medical Abstract Service: Edited by Warren P. Morrill, M. D. Chicago, Physician's Record Co., 1943.

A new medical abstract service is inaugurated with the issue of July 1943. Abstracts are printed on 4 x 6 inch cards, which bear subject headings for filing. A classified index and filing instructions with printed filing guides are included in the service. A series of abstracts will appear monthly.

MARY LOUISE MARSHALL

PUBLICATIONS RECEIVED

Williams and Wilkins Company, Baltimore: Fractures and Dislocations for Practitioners, by Edwin O. Geckeler, M. D. Microscopic Technique in Biology and Medicine, by E. V. Cowdry. Body Poise, by Walter Truslow, M. D., F. A. C. S. Synopsis of Tropical Medicine, by Sir Philip Manson-Bahr, C. M. G., D. S. O., M. D., F. R. C. P: J. B. Lippincott Company, Philadelphia: Life is too Short, An Autobiography, by C. Kay-Scott.

Sheridan House, New York: A Hundred Years of Medicine, by C. D. Haagensen and Wyndham E. B. Lloyd.

W. B. Saunders Company, Philadelphia and London: Internal Medicine in General Practice, by Robert Pratt McCombs.

The Blakiston Company, Philadelphia: Finger Prints, Palms and Soles, by Harold Cummins, Ph. D. and Charles Midlo, M. D.

Paul B. Hoeber, Inc., New York and London: Biomicroscopy of the Eye, by M. L. Berliner, M. D., Volume I.

Grune and Stratton, New York: The Nature and Treatment of Mental Disorders, by Dom Thomas Verner Moore, O. S. B., Ph. D., M. D.

Duke University Press, Durham, N. C.: The Compleat Pediatrician, Fourth Edition, by W. C. Davison, M. D., M. A., D. Sc.

Chemical Publishing Company, Brooklyn, N. Y.: The Biochemistry of Malignant Tumors, by Kurt Stern, M. D. and Robert Willheim, M. D.

New Orleans Medical

and

Surgical Journal

Vol. 96

DECEMBER, 1943

No. 6

NORMAL VARIATIONS OF THE T WAVE SEEN AMONG SOLDIERS

HOMER DUPUY, CAPTAIN, M.C., A.U.S.*
NEW ORLEANS

Electrocardiographic abnormalities are now being reported in young individuals in whom thorough investigation has revealed no organic heart disease, and in whom such specific infections as rheumatic fever and syphilis, were ruled out. A review of the 2,480 electrocardiograms at the Station Hospital, Fort Jackson, South Carolina, was impressive in regard to the incidence of T wave changes in the young age group. Ferguson and O'Connell¹ reviewed 1,812 tracings of midshipmen at Annapolis. They reported inverted to diphasic T waves in lead II, but were not able to correlate these findings with the history, physical examination and other laboratory studies. They concluded, therefore, that abnormal electrocardiograms were not infrequently found in the absence of demonstrable organic heart disease in this age group. They explained these abnormalities on a functional rather than organic basis. H. E. Hoff and L. H. Nahum,² in a series of experimental studies with animals, demonstrated that positive T waves of animal hearts could be inverted by the application of potassium chloride to the pericardial surface. Similar T wave changes were noted by hot and cold applications. They further noted that the abnormal electrocardiographic findings after the application of potassium chloride, heat and cold, that the epicardial surface returned to normal after the effects of these substances

wore off. It is thus apparent that T wave changes may be produced by factors other than the commonly accepted organic diseases.

Many theories have been propounded to explain the cause of T wave inversion in the absence of organic heart disease, but in my opinion no single theory can account for all changes. It is accepted that physiologic factors may produce T wave changes. This has been demonstrated in some of the cases presented in this paper. The most commonly accepted cause of reversible T wave changes not associated with organic heart disease, is rotation of the heart on its vertical axis. I have noted several cases, showing T wave inversion on routine tracings become positive by repeating the tracing during forced held inspiration and forced held expiration, and have also noted T wave changes when an individual was placed from a recumbent to a sitting position. White, Chamberlain, Graybiel³ and others have previously called attention to this. Tobacco smoke and autonomic nervous system imbalance are also capable of producing T wave changes. Thompson,⁴ in the March, 1943 issue of the American Heart Journal, reemphasized hyperventilation as a cause of reversible T wave changes. Paul White⁵ in a recent article on Neurocirculatory Asthenia (Irritable Heart of Soldiers, Effort Syndrome) pointed out that inverted T waves not on an organic basis are seen in some cases of neurocirculatory asthenia and may lead to an erroneous diagnosis of heart disease. Caroline Bedell Thomas,⁶ in an excellent paper regarding electrocardiographic abnormalities in the young states that, "There are a number of

*Approved for publication by the Surgeon General's Office.

physiological mechanisms which may alter the electrocardiogram sometimes to an abnormal degree and that in the younger age group in which degenerative disease of the myocardium is rare, the likelihood is that a given abnormality is a physiological variation rather than an evidence of a pathologic lesion."

It is felt that this subject is of particular interest at this time because of the number of young men seen by selective service physicians, and medical officers in Army and Navy Hospitals where this problem is encountered.

CASE No. 1

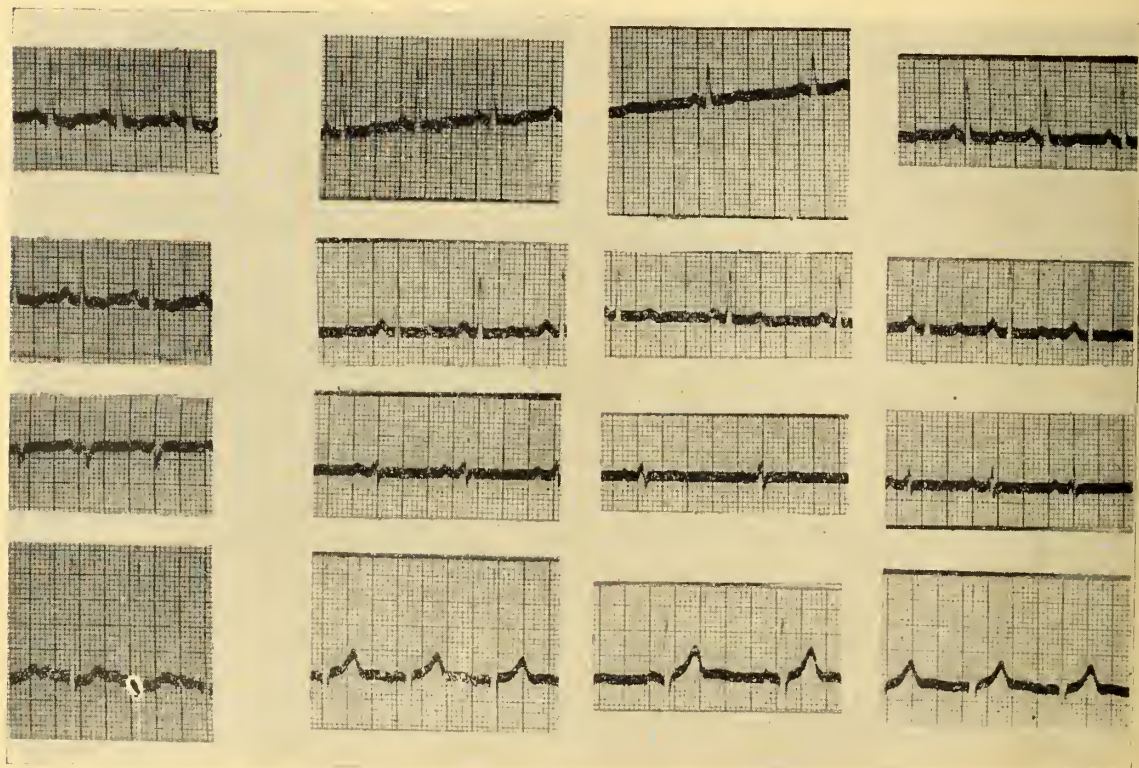
K. P., a white male, aged 26, was examined on February 14, 1943. The patient was told in 1941 for the first time that he had a fluctuating blood pressure. Prior to that time he was asymptomatic. For the past year he has been complaining of a tired feeling and slight dyspnea after exertion. Physical examination revealed a well developed, white male, who did not appear ill. Cardiac ex-

amination revealed no abnormalities. No evidence of decompensation. Blood pressure, initial reading 160/90, subsequent readings at ten minute intervals 150/90 and 130/85. X-ray revealed the heart and aorta to be of normal size and shape. Temperature 98.4 F., sedimentation rate 7 minutes, white blood cells 7,000.

Electrocardiogram, initial tracing February 9, 1943: T waves diphasic to inverted in leads I and II. Flat to inverted in lead III. These findings are suggestive of myocardial disease but may be of no significance. Electrocardiogram on February 10, 1943: With head and chest lowered and during deep held inspiration and forced held expiration, the T waves that were diphasic to inverted became positive.

DISCUSSION

This case is presented to demonstrate the necessity of serial tracings and records taken during inspiration and expiration with the head and chest lowered in order to determine T wave changes due to abnormal cardiac rotation or position rather than to intracardiac lesions.



CASE 1

Reading across the page in this and subsequent illustrations are the four standard leads.

Column 1, made February 9, 1943, shows inverted to diphasic T waves in leads 1 and 2. Flat T waves in lead 3. Column 2 is normal. Columns 3 and 4, made one day later, show the T waves formerly inverted became upright with inspiration and expiration tests.

CASE No. 2

R. J. S., a white male, aged 21, who, for the past 11 years, that is, since the age of 10, has had attacks of localized, precordial pain and palpitation occurring subsequent to strain, lifting or moving heavy objects and after severe exercise. The pain persists for periods varying from five minutes to three hours. Considerable relief is obtained when patient lies on his back. After an attack, if he lies on his left side he has a dull aching sensation over the precordium. He has noted no change in the character, severity or duration of paroxysms of pain since the onset 11 years ago.

Physical examination revealed a well developed, asthenic individual, who did not appear actually ill. There was a soft, inconstant, apical, systolic murmur not transmitted to the axilla or the back; no thrill, no cardiac enlargement; no signs of cardiac decompensation. Blood pressure 128/65. Pulse rate 80, rhythm regular, temperature 98.4. Remaining part of physical examination revealed no abnormal findings.

Laboratory: X-ray of chest showed the lung fields to be clear. The heart and aortic shadows

are normal. Urinalysis—essentially negative. Blood Kahn—negative. White blood cells 7,100, red blood cells 4,350,000. Sedimentation rate 9 mm. (Wintrobe). Blood cholesterol 255.

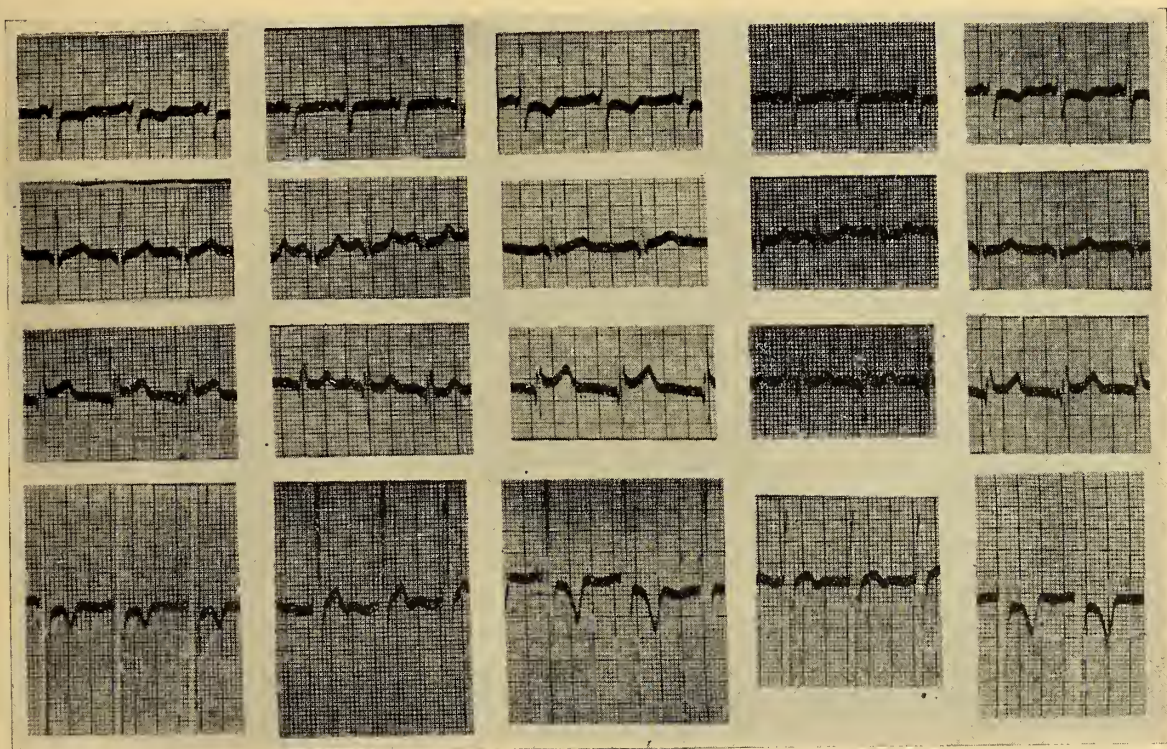
Electrocardiogram on January 1, 1943: Rate 90, rhythm regular, P-R interval .16 sec., P-normal, depressed S-T segment in lead I, elevated S-T segment in leads II and III, left axis deviation, T waves diphasic in lead I and inverted in lead IV. Impression: Pattern of chronic left ventricular strain.

Electrocardiogram on January 2, 1943: No change, pattern not altered by inspiration and expiration tests.

Serial tracings taken on January 3, 4, 5, 6, 7, 10, 15, 17 and February 1 and 15, showed no change from pattern on January 1, 1943.

Electrocardiogram on January 21, 1943: Rate 115, rhythm regular, P-R interval .14 sec., P-normal S-T segments isoelectric in leads I, II, III, and IV. T wave low to diphasic in lead I, positive in leads II, III, and IV.

One hundred per cent oxygen was given for 15 minutes prior to and during the recording of this tracing; pattern same as January 1, 1943.



CASE 2

Column 1, made January 1, 1943, shows pattern of left ventricular strain. All of tracings over seven week period were same as this tracing except for columns 2 and 4. This pattern was not altered by inspiration and expiration tests. Column 2, made three weeks later, shows the effect of amyl nitrite given before and during recording. Rate 115. Column 3, made the next day, shows a result of inhalation of 100 per cent oxygen 15 minutes before and during recording. Column 4, made February 8, 1943, is a comparatively normal tracing for no apparent reason except increase in cardiac rate. Column 5 is the final tracing showing pattern of chronic left ventricular strain.

DISCUSSION

The tracing represents the typical pattern of chronic left ventricular strain described by Barnes, and Whitten,⁷ L. N. Katz⁸ and others. Whereas the tracing of this 21 year old patient is typical for the description of chronic left ventricular strain, there is an absence of hypertension and left ventricular enlargement, one of which or both are commonly regarded as being associated with the pattern. It is different from the classical pattern of myocardial infarction. If the history of precordial pain with the electrocardiographic findings is thought due to a progressively narrowing process of the coronaries, we would have to assume that the narrowing was sufficiently advanced at the age of 10 to produce symptoms. It is felt that this is a possibility but the likelihood of such being the case is rather improbable.

The absence of hypertension and evidence of cardiac enlargement with the lack of progressive alterations of the pattern over a period of seven weeks' observation in an individual of this age raises some doubt as to whether the findings are attributable to an organic lesion. A tracing taken subsequent to inhalation of amyl nitrite was normal. From this, one would consider the possibility of vasospasm of the coronaries with dilation of the vessels occurring subsequent to the use of the drug accounting for the normal tracing. However, the fact that the chronic left ventricular strain was present with all serial tracings over a period of seven weeks, except for the tracing taken after amyl nitrite inhalation and on one other occasion January 21, 1943, when for no apparent reason, except for an increased rate, a normal tracing was recorded, would speak against a vasospastic condition.

It must further be noted that during the amyl nitrite inhalation and on January 21 waves at this time were altered and S-T waves at this time were altered and S-T segments became isoelectric. The increased rate may have been a contributing factor for it is known that T waves can be affected by increased rate.

The possibility of a congenital anomaly of the coronary vessels such as an atresia was strongly suggested. Were this the cause, however, one would expect the findings to be constant, whereas on two occasions comparatively normal tracings were obtained.

It is felt that this case definitely presents a diagnostic problem. I have considered strongly the possibility of congenital coronary anomaly, vasospastic coronary disease and progressive coronary narrowing. Hypertension and demonstrable ventricular enlargement have been ruled out. Because of the scarcity of clinical material found in reviewing the literature regarding the possibility of this particular type pattern being associated with a functional condition, it was felt that the individual should be managed as though the tracing was abnormal and indicative of myocardial disease. Although the probability is that the tracing is abnormal, it is felt in the light of his age, clinical and laboratory studies with particular regard to the serial electrocardiographic studies and from what we have seen in the electrocardiograms of the younger age group, that a physiologic or functional factor cannot be satisfactorily ruled out.

CASE No. 3

S. L. G., a white male, aged 23, was admitted to Station Hospital, Fort Jackson, July 17, 1942, complaining of attacks of dizziness, shortness of the breath, weakness, precordial pain, palpitation and numbness of the hands, arms and fingers. These symptoms usually appeared after moderate exertion such as hikes, obstacle courses or long drill periods. However, he has had attacks that were not preceded by effort. The above complaints were first noted in 1938.

Physical examination revealed a well developed white male, who appeared considerably apprehensive and nervous. Blood pressure was 185-140/90-80, pulse rate 100, respiratory rate 22 and shallow. No abnormality of heart sounds, no murmurs, shocks or thrills could be elicited. Cardiac borders were within normal limits and there was no evidence of cardiac decompensation. Thyroid gland was not palpable. Hands and feet were moist.

Laboratory: Electrocardiogram on July 20, 1942, rate 100, rhythm regular, normal P waves, PR interval .16, inverted T in leads I and II, low voltage in lead III, prominent inversion of T in lead

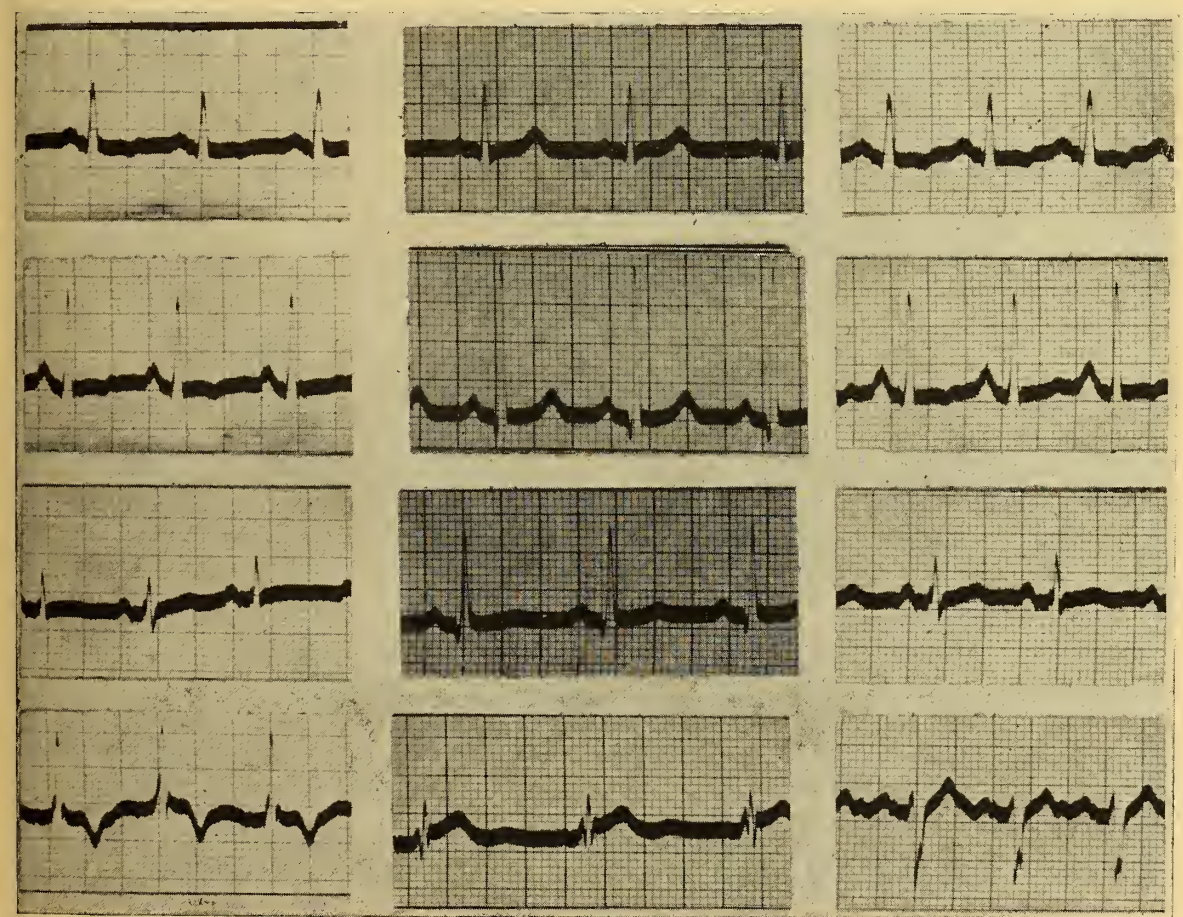
IV. X-ray of chest on July 18 showed heart borders within normal limits. Urine concentration test—normal; specific gravity 1.030, urinalysis essentially negative. Blood N. P. N.—35. Blood Kahn—negative. Basal metabolic rate—unable to obtain adequate record because of instability of patient at time of tests.

COMMENT

This patient is extremely apprehensive and nervous. He has a labile blood pressure and pulse. Clinically he is typical of the neurocirculatory asthenic group and subject to sympathetic nervous system influences. Serial electrocardiograms taken July 24, 1942, August 4, 1942, and August 15, 1942, revealed only slight variations from the initial one taken July 20, 1942. The heart rate varied from 100 to 115 at time the above recordings were made.

During his course in hospital we had several personal interviews with the soldier and were able to obtain a definite lowering of blood pressure and pulse to within normal limits. Blood pressure variations 210/100 to 140/80. Pulse 120 to 82. However, at no time were we able to obtain relaxation when the electrocardiograms were taken except by use of sedation.

With complete relaxation and subsequent slowing of pulse rate obtained only by the use of intravenous sodium amytal was I able to get a normal electrocardiogram. At this time the rate was 75, PR .18, T in leads I, II, III and IV upright. Tracing repeated one week later without sedation showed an abnormal pattern similar to those previously described. I, therefore,



CASE 3

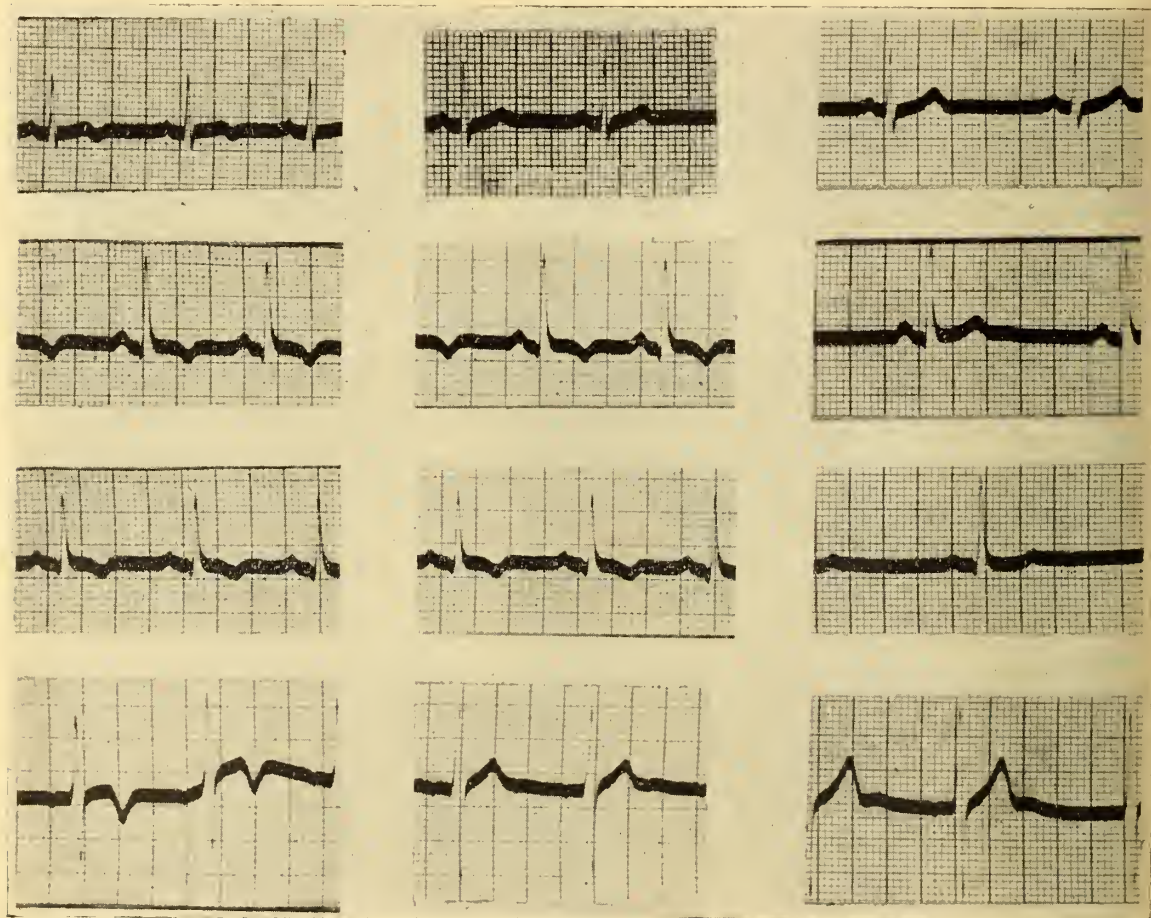
Column 1, made July 20, 1942, shows diphasic to inverted T waves in leads 1, 2 and 4. All of serial tracings over a period of seven weeks, except for column 2, similar to this tracing. Column 2, made August 21, 1942, with intravenous sedation adequate relaxation obtained. Column 3, made three days later, shows without sedation a tracing similar to that made on July 20.

wish to emphasize the factor of anxiety and rapid heart rate as being a possible influencing factor on electrocardiographic patterns and one to consider before final evaluation and significance of T wave changes are to be made. In this particular case, where respiratory movements were rapid and shallow, the factor of hyperventilation can be considered as a contributing influence.

CASE No. 4

A. B. C., a white male, aged 21, was examined on January 29, 1943. Since the winter of 1939, that is, since patient was 17 years old, he has had attacks of localized, precordial pain and palpitation. The attacks last for periods varying from 15 minutes to 10 hours and are usually brought on

with severe exertion, but not infrequently occur when at rest in bed. The onset is usually sudden and the termination gradual. The attending physician, prior to patient's induction into the Army, prescribed inhalation of spirits of ammonia and strychnine, which he states frequently lessened the intensity and duration of the pain. There is no associated dyspnea, palpitation, cough or other symptoms referable to the cardiovascular system. There is no past history of rheumatic fever or any other serious illness. He states that he is nervous. Patient does not appear acutely ill, he is well developed, of asthenic habitus, and appears apprehensive. Physical examination, including examination of the heart, reveals no abnormalities. Blood pressure 120/70, temperature 98.4, x-ray of chest showed normal cardiac shadow. White blood cells 5,000; repeated three days later, 6,000. Urinalysis negative.



CASE 4

Column 1 tracing, made January 29, 1943, shows initial diphasic T waves in lead 1, which are inverted in leads 2, 3 and 4. Column 2, made the following day, shows T waves inverted only in leads 2 and 3. All tracings remained the same as this one over a period of seven weeks except the tracing taken February 4, 1943. T waves were not altered by inspiration and expiration tests. Column 3, made five days later, is the tracing taken when evidence of myocardial disease.

Electrocardiogram on January 29, 1943, showed rhythm regular, rate 88, P normal, PR .16, QRS normal, T waves inverted in leads I, II, III, IV.

Electrocardiogram on January 30 showed rhythm regular, rate 85, P normal, PR .16, QRS normal, T waves inverted only in leads II and III. All serial tracings from January 30, 1943, through March 15, 1943, except those taken on January 29 and February 4, were the same as this pattern. The inversion of T waves in leads II and III was not altered by inhalation and exhalation tests. A tracing taken prior to his discharge from the Army on March 15, 1943, showed no change from tracing taken on January 30, 1943.

Electrocardiogram February 4, 1943: Tracing taken in a. m. shortly after awakening at which time he was quiet and not apprehensive: Rhythm regular, rate 54, P normal, PR .16, QRS normal, T waves upright in all leads. Interpretation: Normal tracing.

DISCUSSION

This patient is young, asthenic, nervous, apprehensive and typical of one of the neuro-circulatory asthenic group. As recently pointed out by White, Chamberlain, and Graybiel,³ an individual of this kind with increased autonomic nervous influence is prone to have a sino-auricular tachycardia and not infrequently T wave flattening or inversion and unassociated with organic heart disease.

The normal tracing with relatively slow cardiac rate (54) obtained on February 4, was taken in the morning after the patient had a good night's rest. The recording was made before he arose from bed, at which time he was quiet, calm and apparently free of exciting and nervous influences. This is the only time we were able to obtain such favorable conditions and a normal tracing.

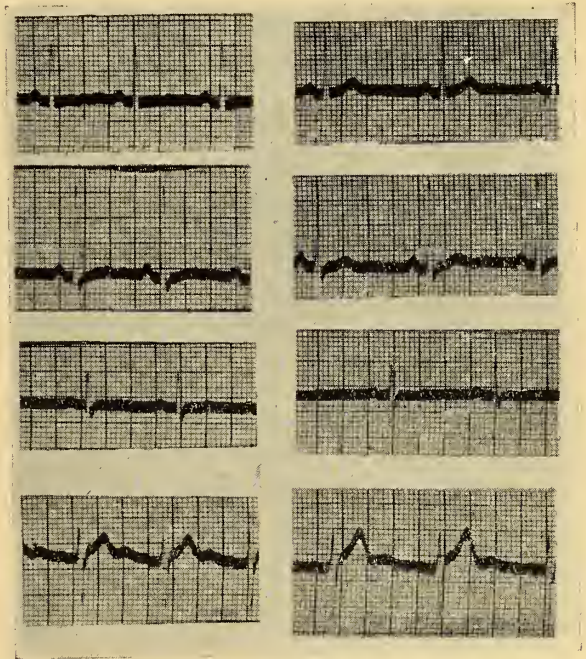
The fact that the T waves were inverted in standard and precordial leads on January 29, and inverted only in leads II and III the following day, in the absence of any change in the clinical or other laboratory studies, further adds to the questionable significance of the T wave inversion in this case.

The T wave changes that occurred during the seven weeks' observation of this man in the absence of fever, leukocytosis, increased sedimentation rate, x-ray or fluoroscopic evidence of cardiac abnormality

with no past history of rheumatic fever and no abnormal cardiac findings on physical examination, would tend to rule out a rheumatic infection and other specific infectious processes.

CASE No. 5

R. M., a white male, aged 22, was admitted to hospital complaining of bilateral deafness. He was admitted to E. N. T. service and a diagnosis of otitis media, chronic non-suppurative, severe, bilateral, cause undetermined and defective hearing, bilateral, secondary to above diagnosis, was made. Because of an admission blood pressure determination of 159/90 a cardiac consultation was requested. The opinion of consultant was as follows: No previous history of hypertension, no symptoms referable to cardiovascular system and no past history



CASE 5

Column 1, made February 3, 1943, shows diaphasic to inverted T waves in lead 1 with low voltage to flat T waves in leads 2 and 3. Column 2, made the following day, indicates normal T waves in leads 1 and 2.

of rheumatic fever. Physical examination revealed a well developed, well nourished male who had defective hearing. Successive blood pressure readings at five minute intervals were 150/90, 140/88, 138/84. No abnormalities noted on cardiac examination. Opinion: No evidence of cardiovascular disease. Laboratory: Urinalysis negative, specific gravity 1.030, red blood cells 4,970,000, white blood

cells 7,400, Kahn negative. X-ray of chest showed no enlargement of cardiac shadow.

Electrocardiogram February 3, 1943: Rate 86, rhythm regular, PR .16, P normal, QRS normal, T waves diphasic to inverted in lead I and varying in form in successive cycles of the same lead, slightly low amplitude in lead II and flat in lead III. Recommended repeat tracing.

Electrocardiogram February 4, 1943: Rate 70, rhythm regular, PR .16, P normal, QRS normal, T waves that were diphasic to inverted in lead I on tracing taken February 3, are now upright. T waves that were flat in lead III are now positive.

Electrocardiograms on February 7 and 8 showed no change from tracing taken February 4.

DISCUSSION

This case again demonstrates the necessity of serial tracings and shows the significance of diphasic to inverted T waves that vary in form in successive cycles of the same lead.

COMMENT

Five cases are reported in young soldiers demonstrating interesting electrocardiographic changes commonly regarded as indicative of myocardial disease, in whom there was found no conclusive clinical or other laboratory evidence to bear out such a diagnosis. In four of the cases S. L. G., A. B. C., P. K. and R. M., the reversibility of the T waves was demonstrated. Observations presented lead to the conclusion that the changes were not related to an organic lesion. In one of the cases R. J. S., the probabilities are that the electrocardiographic changes are due to a physiologic factor. If the changes in the case of R. J. S. are due to a congenital anomaly or to organic coronary disease they are of particular interest because of the infrequency which such tracings have been recorded in the younger age group.

The following factors are considered important in the evaluation of T wave changes:

1. Character of the waves: It is important to determine whether the change is of the minus-plus type or the plus-minus type (cove plane T wave of Pardee). According to Ashman and Hull,⁹ the form

minus-plus, particularly when the downward portion is shallow, is of less pathologic significance than the plus-minus types, and may occasionally be seen in any limb lead in an apparently normal heart.

2. Consistency of changes: Waves that vary in direction and amplitude in successive cycles of same lead are less significant than fixed changes in same lead.

3. Rotation of the heart: Change of body position, inspiration, expiration and less frequently, deformity of thoracic cage can affect the T wave.

White and his associates have stressed the importance of change in position of the heart in the thorax accounting for T wave abnormalities.

Not infrequently T waves that are diphasic or inverted become upright merely by repeating the tracing with the patient in the Trendelenberg position, and making records during deep held inspiration and forced held expiration.

4. Effect of anxiety and rapid heart rate: Diphasic or inverted T waves with rapid heart rates may become upright when relaxation and subsequent slowing of the heart rate ensues. On occasions I have had to use sedation to obtain the desired relaxation. Various changes in the T waves may be associated with changes in heart rate. The effect of increased sympathetic activity in lowering or inverting the T wave has been recognized.

5. Serial tracings: The fallacy of accepting a single tracing in a young individual as indicative of myocardial disease, cannot be over-emphasized. Diphasic to inverted T waves in leads I, II, III, and IV on routine tracings may become upright on tracings repeated the following day for no apparent reason, that is, in the absence of a history or physical findings suggestive of cardiovascular disease.

6. The clinical picture.

7. I have excluded in this presentation, organic cardiac lesions causing T wave changes. However, for the sake of completeness some of the extracardiac conditions that may produce reversible heart dis-

ease with subsequent electrocardiographic changes are mentioned. These are endocrinopathies, avitaminosis, blood dyscrasias, acute toxic processes, drugs, pulmonary conditions causing abnormal cardiac rotation, and so forth. These should be considered in the final evaluation of the T wave changes.

In conclusion, the necessity of very careful evaluation of T wave abnormalities in the younger age group is emphasized.

It is felt that various procedures to determine reversibility of T wave inversions should be carried out routinely. Finally, it is emphasized that not infrequently T wave changes suggestive of myocardial disease particularly in the young may be associated with normal physiologic variations rather than with organic lesions.

REFERENCES

1. Ferguson, D., Lieutenant Commander, Med. Corps, U.S.N. and J. T. O'Connell, Lieutenant, Med. Corps, U.S.N.: Cardiovascular observations, U. S. Naval Med. Bull., 24:860, 1926.
2. Hoff, H. E., and Nahum, L. H.: The factors determining the direction of the T wave: The effect of heat and cold upon the dextro and levocardigram, Am. J. Physiology, 131:700, 1940.
- Hoff, H. E., Nahum, L. H., Winkler, A. W., and Smith, P. K.: Recovery of fatigued muscle following intravenous injection of potassium chloride, Am. J. Physiology, 131:615 1941.
- Kisch, B., Nahum, L. H., Hoff, H. E.: The predominance of surface over deep cardiac injury in producing changes in the electrocardiogram, Am. Heart J., 20:174, 1940.
3. White, P. D., Chamberlain, L., and Graybiel, A.: Inversion of the T waves in lead II caused by a variation in position of the heart, Brit. Heart J., 3:233, 1941.
4. Thompson, W. P.: The electrocardiogram in the hyperventilation syndrome, Am. Heart J., 25:372, 1943.
5. White, P. D.: Neurocirculatory asthenia, (irritable heart of soldiers, effort syndrome), Am. Heart J., 2:8, 1942.
6. Thomas, C. B.: The significance of electrocardiographic abnormalities in young adults, Medical Journal Club, Johns Hopkins Medical School, January, 1943.
7. Barnes, A. R.: Electrocardiographic Patterns, 1st ed., Charles C. Thomas Company, Springfield, Ill.
8. Katz, L. N.: Electrocardiography, Lee and Febiger Co., Philadelphia, Pa.
9. Ashman, R., and Hull, E.: Essentials of Electrocardiography, 2nd ed. Macmillan Company, New York, N. Y.

I wish to express my appreciation to Major David B. Snelling, M. C., A. U. S., of the Station Hospital, Fort Jackson, South Carolina, for his advice and cooperation in the performance of these studies.

IMPORTANT CONSIDERATIONS IN THE TREATMENT OF TOXIC GOITER*

WARREN H. COLE, M. D.†
CHICAGO.

Although the prophylactic use of iodine in iodized salt has been reported as decreasing the incidence of toxic goiter in certain localities, we have not noticed any lowering of incidence in the Chicago area, which is in a goiter belt. Cases of toxic goiter, therefore, still constitute a large percentage of the admissions to the hospitals in certain localities. The diagnosis is made with little difficulty in the patients who have thyrotoxicosis of severe degree. On the other hand, differential diagnosis may be very difficult in patients with mild hyperthyroidism, since the disease may simulate such diseases as tuberculosis, leukemia, endocarditis, or neurocirculatory asthenia.

A detailed discussion of diagnosis will not be considered in this presentation, but a few features of differential diagnosis will be considered. In the table below one notes, for example, that hyperthyroidism of the

TABLE 1

Symptoms or signs	Toxic goiter	Neuro-Circ. asthenia
Nervousness	Yes	Yes
Weakness	Yes	Yes
Weight loss	Yes	Yes
Increased sweating	Yes	Yes
Sleeplessness	Yes	?
Tachycardia	Yes	Yes —
Tremor	+ +	+
B. M. R.	25 to 70+	20 to 30+
Cardiac output	Increased	Normal
Heat intolerance	Yes	No
Appetite	Increased	Normal or decreased
Attitude to activity	Desires	Avoids
Attitude to work	Willing	Reluctant
Eye signs	+ or —	No
Goiter	In 80 to 90%	No
Response to iodine	+	No

*Read before the Seventh Annual Meeting of the New Orleans Graduate Medical Assembly, March 5-18, 1943.

†From the Department of Surgery, University of Illinois, College of Medicine and the Illinois Research and Educational Hospital, Chicago, Illinois.

mild type is extremely difficult to differentiate from neurocirculatory asthenia.

In the two groups it will be noted that symptoms of hyperthyroidism such as nervousness, weakness, loss of weight and increased sweating are likewise symptoms of neurocirculatory asthenia. If eye signs are present, the diagnosis of thyrotoxicosis can be made, but it must be appreciated that exophthalmos and allied signs are present in toxic goiter in perhaps less than 50 per cent of cases. It should likewise be emphasized that in at least 10 per cent of cases of toxic goiter, there will be no palpable evidence of an enlarged thyroid gland. The attitude of the patient to exercise and work may be very helpful in certain cases since the patient with toxic goiter craves activity whereas patients with neurocirculatory asthenia and many other such diseases shun activity.

One of the most valuable means of establishing the diagnosis is observation on the response of iodine to the symptoms. With practically no exceptions, the symptoms of thyrotoxicosis will be definitely decreased unless the patient has been on iodine therapy recently. If the diagnosis is not clarified after various examinations and tests, conservative management should be adopted, since in such mild cases, delay of operation will not be harmful. It is naturally preferable indeed to postpone operation in such cases, lest thyroidectomy be performed on a patient with pulmonary tuberculosis or some other such disease. The seriousness of such an error can readily be appreciated.

PREOPERATIVE PREPARATION

Administration of Iodine: As soon as a basal metabolic rate has been obtained, the patient is put on iodine therapy. The preparation usually used is Lugol's solution in a dose of 5 to 15 minims three times a day. Although it is usually considered that the optimum beneficial effect is obtained in ten or twelve days, it is usually preferable to extend iodine therapy longer than this in severely toxic patients. With few exceptions, severely toxic patients will be much

better operative risks if iodine therapy is extended several days beyond this period. Opinions differ as to the value of cessation of iodine therapy when through uncontrollable circumstances the drug has been given for several weeks or months, or when the patient does not appear operable with an extended interval of therapy. The author prefers to keep such patients in the hospital under observation, maintaining iodine therapy, hoping to catch the patient in a remission when operation (at least removal of one lobe) will be permissible. I admit, however, that on certain occasions administration of iodine after a rest period of several weeks may at times be a wise procedure.

Increased caloric intake: One of the most common errors made in the treatment of severe thyrotoxicosis is failure to give the patient sufficient food. I wish to emphasize very emphatically that it is not sufficient simply to tell the patient to eat more food. If the patient is severely toxic and of doubtful operability, the utmost value of increased caloric intake must be utilized, since gain in weight is so essential to achieving the physical status of operability. It is a fairly safe and advisable procedure to recommend a 5,000 calorie diet for these severely toxic patients and actually to increase it to 6,000 if the patient will eat that amount. Rarely indeed will they fail to eat 5,000 calories, except then they are having anorexia and perhaps vomiting with diarrhea which in reality is an expression of a crisis. The diet should be a balanced one, containing a liberal quantity of protein.

Conservation of energy: Patients with thyrotoxicosis should not be working, particularly if their work is physical labor. Even work limited to mental exercise is undesirable if extended over several hours. The utilization of the patient's time in duties or pastimes which help eliminate the monotony of the passage of time is, however, desirable. The patient should be allowed to undertake moderate exercise. Only when the patient is extremely toxic, approaching the crisis stage, or when cardiac

decompensation is present is complete bed rest indicated. Patients with a significant amount of thyrotoxicosis should be encouraged to take an afternoon nap of at least two hours.

Elimination of psychic trauma: A review of the history of patients with toxic goiter reveals a surprisingly large number of them who date their onset to a serious illness or accident in the family, perhaps associated with financial worry. For example, a mother with three or four sick children who is still trying to carry on social and household duties will have her symptoms severely aggravated by these activities. Elimination of such sources of worry and undue expenditure of energy will do much indeed toward an efficient preparation for operation. When home conditions are unsatisfactory, hospitalization may, therefore, become a necessary part of treatment.

Sedation: Since patients with thyrotoxicosis sleep poorly and need an excess amount of rest, including sleep, the administration of sedatives becomes an important phase in therapy. Most any of the relatively harmless sedatives are satisfactory. The one commonly used is phenobarbital in a dose of one-half grain two or three times a day, giving perhaps most of it in the evening. This will relieve a great deal of apprehension and allow the patients to rest more effectively as well as allow them to get more sleep.

Treatment of complicating diseases: The importance of emphasizing the treatment of complicating diseases probably need not be discussed. However, we should call attention to the fact that diseases such as diabetes, or urinary infection may complicate thyrotoxicosis just as other diseases. They must be treated very effectively since they add a load to the patient's physical difficulties and detract from operability. The most common complicating disease will of course be cardiac decompensation, as particularly noted in toxic nodular goiter. In such cases, bed rest is desirable. The use of digitalis or quinidine in such patients is somewhat controversial, but in general neither is given except in certain cases of

fibrillation. The use of a diuretic such as salyrgan may be extremely desirable, in cardiac decompensation with edema, particularly if there is no significant renal damage.

Miscellaneous therapy: Conforming to the experiences of Curtis and associates, who demonstrated a negative calcium balance in hyperthyroidism, calcium therapy is desirable. It is probable that most vitamins are utilized at a more rapid rate in thyrotoxicosis than in other diseases. This appears to be true particularly of vitamin B₁. It therefore appears desirable to give large doses of B₁, especially in severely toxic patients.

PREREQUISITES FOR OPERATION

In an endeavor to teach students to measure operability and to determine when a given patient was ready for operation, it was discovered that adoption of mathematical principles clarified this problem to a marked degree. It can be assumed that all clinicians have a way of their own of determining when a patient is ready for operation. In general these prerequisites will be found to fit in to a great extent with the prerequisites described below in a mathematical way.

Gain in weight: Perhaps the most important prerequisite for operation in severely toxic patients is a gain in weight. As stated before, rarely will a caloric intake of less than 5,000 calories achieve this standard in adults who are severely toxic. The administration of a liter of 10 per cent glucose every day may assist somewhat in achieving a gain in weight. The amount of weight gain required is of course dependent upon the individual case. A patient who has lost no more than eight or ten pounds need gain no more than perhaps two or three. On the contrary, a patient who has lost 50 or 60 pounds and is in a very poor state of nutrition should gain ten or 20 pounds before he can be considered to be in a satisfactory state of operability. The patient's strength should return to the point that he is able to walk about the ward without undue fatigue.

Resting pulse rate should be below 110: The pulse rate is a fairly accurate index of toxicity, but the influence of excitement or exercise on the pulse rate should always be kept in mind. It is preferable to have the resting pulse rate below 110. If it is above 120, the patient is not operable, except in certain cases when a rapid rate accompanying fibrillation need not necessarily be an expression of severe toxicity. The reaction of the pulse rate to minor excitement is frequently a good index to the degree of toxicity. In other words, if the pulse rate at rest is 108 but flares to 130 or 140 when the patient is subjected to some slight excitement such as talking to a stranger, it is usually an indication of a greater toxicity than other manifestations indicate.

The basal metabolic rate after iodine therapy should be less than 50 per cent above normal: Everyone is aware of the fact that the basal metabolic rate cannot be considered as direct evidence of degree of toxicity. Yet there is little doubt but what these readings, in general, are of definite value so long as other information is likewise considered. In other words, with few exceptions, patients with a basal metabolic rate of more than 50 above normal after iodine therapy, are apt to be severely toxic.

Response to iodine therapy: As previously stated, iodine therapy must be continued at least two weeks in the severely toxic patient before operation is considered. After iodine therapy, the average patient will exhibit a definite improvement in symptoms, and the basal metabolic rate will drop 20 to 50 per cent. Ordinarily, if a severely toxic patient obtains only slight improvement following iodine therapy, there is indication that operation may be poorly tolerated.

No untreated complications: Complications such as diabetes or cardiac decompensation should be adequately treated and under control before operation is undertaken.

PRECAUTIONS IN OPERATION

The decision as to time of operation is obviously a very important one from the

standpoint of mortality rate. It must be emphasized that patients with toxic goiter have periods of exacerbation and periods of remission. Likewise, therapy may be altered in case certain routine procedures appear not to be effective. In spite of the fact that the physician has made a complete study of the patient's condition, errors regarding operability can be made. In our clinic when we have a patient who is doubtfully operable, the patient is prepared for operation and sent to the operating room as a trial procedure. If his pulse rate rises to above 140 and does not come down to less than 130 under proper anesthesia, he is considered a poor operative risk. If the pulse rate is much higher than this, he is sent back and submitted to another trial at a later date.

Anesthesia: I prefer ethylene anesthesia. This gas allows the use of more oxygen than does nitrous oxide and does not have the effect on the heart that is sometimes observed with cyclopropane. Although the effect on the heart with cyclopropane may be serious, yet it may produce a bradycardia or partial heart block of atypical character which may give one a sense of false security because of the decrease in heart rate. I do not believe that local anesthesia is a satisfactory anesthetic for routine purposes, since apprehension during the operative procedure is difficult indeed to eliminate. Obviously, to any patients with mild toxicity, this added apprehension will not be of any concern. However, in patients who are severely toxic and doubtfully operable, this apprehension which is an extra load on the cardiac reserve may be sufficient to reflect disadvantageously on the mortality rate. As previously stated, on numerous occasions patients were sent to the operating room for trial observation but returned to their rooms because they had such a severe tachycardia and required so much oxygen during anesthesia that operation appeared unwise. On a few occasions these patients were scheduled for operation two or three days later but they were put to sleep on the ward with intravenous pentothal. This relieves the apprehension and

the consequent severe load on the heart, which I believe may be sufficient to ruin operability. With practically no exceptions, these patients to whom we have given pentothal intravenously as a premedication, retained a satisfactory pulse rate which remained low (that is, below 120) after induction of ethylene. A few years ago avertin was tried in this clinic as a basal anesthetic but its use was stopped because it appeared to exert a slight but definite deleterious effect on many patients of the severely toxic group. I am convinced that sodium pentothal intravenously is a safer basal anesthetic and does not produce the respiratory depression which is sometimes noted following the use of avertin.

Extent of operation: If the patient does not meet the prerequisites previously mentioned, he is not considered a safe candidate for a bilateral thyroidectomy. However, if he meets all except one or perhaps is doubtfully operable for various reasons, the removal of one lobe is considered perfectly safe. I agree with Lahey who is convinced that stage operations in surgical treatment of toxic goiter are at times advisable.

If the pulse rate should go above 130 during removal of the first lobe, the surgeon and anesthetist should give serious thought to the possibility of performing a thyroidectomy on only one side. If the pulse rate of 130 continues upward and reaches 140 about the time the first lobe is removed, this constitutes a definite indication that the operation should terminate at this point, particularly if the patient is known to be a doubtful case from the standpoint of operability.

I believe that a fairly complete thyroidectomy should be done, leaving the posterior capsule and one to three grams of thyroid tissue with the capsule. The amount of tissue left is determined somewhat by the size of the gland and the toxicity of the patient. In other words, in severely toxic patients with small thyroid lobes, the removal should be fairly complete, allowing perhaps no more than one gram of thyroid tissue to remain with the posterior capsule.

Precautions in technic: Although preoperative preparation and the decision as to the time of operation are perhaps the most important factors in the maintenance of a low mortality rate in the surgical treatment of goiter, the operative technic is of course important. Only in the severely toxic patient is speed of operation really an important item. Since a great many operative complications are the direct result of too much hurry on the part of the surgeon, he should not allow the clock to influence his operation except in the group of severely toxic patients when all trauma must be reduced to a minimum. Although I am not of the opinion that the recurrent nerve must be isolated for its safety, yet the surgeon must at all times appreciate the location of that structure and avoid putting clamps on or near it. Frequently the type of breathing exhibited by the patient under the anesthetic will tell the surgeon and the anesthetist when the nerve has been damaged. Naturally, if the damage has been inflicted by a clamp or proximity of a clamp, it should be removed. If the nerve has not been severed, recovery will take place fairly completely. The time required for recovery varies, depending upon the degree of trauma; I have observed many patients who had temporary palsy which disappeared in a few days.

The postero-medial capsule of each lobe should be left intact so as to preserve the parathyroids. With the knife the thyroid tissue can be shaved so that no more than a couple of grams of tissue remain with the capsule. Shaving the capsule and preserving it in this way, particularly on the medial side, likewise minimizes danger of harm to the recurrent nerve.

Ordinarily we do not cut across the ribbon muscles transversely, but if exposure is poor, we do not hesitate to do so. Furthermore, the surgeon should not feel embarrassed in moving to the other side of the table if exposure on the side opposite him is difficult.

In my experience, non-absorbable suture material is preferable to catgut. Although a few years ago silk was used for thyroid-

ectomies in our clinic, cotton is now the material of choice. Cotton as popularized by Ochsner and associates, is a very satisfactory suture material for this purpose, particularly since it appears to discourage the development of infection, or rather does not encourage it. In two or three hundred cases of thyroidectomies in which silk was used, there were two or three infections, one or two of which drained for several weeks. In an equal number of cases in which cotton has been used, there have been no infections, at least of a severity which would require drainage.

POSTOPERATIVE TREATMENT

Obviously postoperative therapy will differ considerably in the severely toxic group as compared with the mildly toxic group. In either case, the anesthetist or surgeon must be certain that the patient's airway is open and breathing is unimpaired. Allowing the patient to be up in a semi-sitting position with the back rest up adds considerably to his comfort and aids in swallowing.

It is essential that severely toxic patients be given a liberal quantity of fluid, particularly if the weather is warm and the patient is sweating considerably as he is apt to do. He should receive a total of at least 3,000 c. c. on the day of operation, since he will not be able to take much of this by mouth during this period; the intravenous route seems preferable. In the average case a solution of 5 per cent glucose is preferable, although a liter of 5 per cent glucose with saline perhaps should be included. In severely toxic patients the glucose should be of 10 per cent concentration, except that containing saline.

The day following operation, the patient will be able to take considerable fluid by mouth. However, if he is severely toxic, this amount must be measured or approximated as accurately as possible and sufficient glucose given by vein to constitute a total intake of 3,000 c. c. for an adult. Naturally oral intake is encouraged as rapidly as the patient is able to swallow, starting out with liquids and soft food.

I am of the opinion that iodine therapy should be given postoperatively and maintained until all symptoms of hyperthyroidism have disappeared. I realize that the subject is controversial, but it appears to me that if we can minimize the hyperplastic element, the tendency toward recurrence will be minimized. It is well known that of the conservative procedures available, iodine therapy is perhaps the most valuable in the reduction of cellular hyperplasia in the thyroid gland. Since there usually are a few grams of thyroid tissue left, it would appear advisable to strive for production of a resting phase for this remaining tissue, particularly since the operation of thyroidectomy does not eliminate the primary cause of the disease. If the primary cause of the disease (which in reality is unknown) had been eliminated, then the need for iodine would not be present.

In severely toxic patients oxygen therapy should be given as a routine. Ordinarily, the oxygen tent frightens thyroid patients so badly that the use of a nasal tube is preferable although probably not as effective. By utilizing a stream of at least six liters of oxygen per minute, considerable assistance can be rendered the circulatory mechanism. If an oxygen tent is used, it will usually be necessary to explain the situation carefully to the patient to prevent severe apprehension.

Sedation is very important in conserving energy and allowing the patient to obtain ample sleep. Morphine must be used liberally during the first 24 to 48 hours, but obviously the respiratory rate must be watched at all times lest an overdose of morphine depress the respirations and lead to anoxia.

The patient should be watched closely at all times, and symptomatic treatment utilized as indicated. It is particularly important to watch him for any evidence of respiratory obstruction which might be brought about by trauma to the recurrent nerves or by a hemorrhage into the operative area. If the wound is closed without drainage, as is done in our clinic, consid-

erable blood can accumulate with very little external evidence of it. The voice may be extremely helpful in determining possible injury to the nerves, although it is appreciated that many patients have a harsh voice for a day or two following thyroidectomy, even though there has been no injury to the nerve, or respiratory obstruction.

In general there is a tendency for the nurses to place too many blankets over the patient when he returns to the ward. In a room with proper temperature, very little cover should be placed over a severely toxic patient who has just been operated on. Since he is already burning up energy at a terrific rate, nothing more than a sheet and bedspread will be necessary. Too much cover may encourage the development of fever with crisis manifestations.

Patients should be observed for the possible development of tetany. Early symptoms consist of tingling and numbness of the fingers and a positive Chvostek's sign. The first evidence noted by the physician may be an awkwardness in the patient's attempts to use his hands. Carpopedal spasm manifested with or without the aid of a tourniquet is likewise important evidence of the development of tetany. If tetany develops, parathormone should be given immediately. However, recent experience shows that dihydrotachysterol is just as effective as parathormone, and the patient does not become resistant to it after continued therapy as he frequently does after parathormone therapy. In the average case, the use of these two effective agents will be necessary only for a few days. Thereafter, the administration of calcium in the form of gluconate or lactate, along with a liberal intake of milk will be adequate to control the patient's symptoms.

TREATMENT OF CRISIS

Obviously we strive to eliminate the post-operative development of a crisis by proper preoperative treatment and choice of time for operation. In spite of the utilization of the best judgment available, crises of a mild character will develop now and then. However, as Lahey has so emphati-

cally stated, a development of a severe crisis is a definite indication that either too much was done at the operation, or the operation was done at the wrong time.

A rising pulse rate and elevation of the temperature will be early indications of the development of a crisis. Important features in the treatment of crisis are oxygen administration, effective sedation, and ample fluids, particularly a liberal intake of glucose. A fluid intake of 5,000 c. c. may actually be indicated. It will be of advantage to utilize 10 per cent glucose for at least a great portion of this fluid. Administration of sodium iodide intravenously in doses up to one gram once or twice a day is indicated. The patient should be placed in a cold (that is, air-conditioned) room, particularly if the season is summer. As a matter of fact, if a cold room is not available, a severely toxic patient should not be operated on on hot days. Failure to follow this precaution is inviting serious trouble in the severely toxic group. Ice packs and wet towels applied to the skin, perhaps with a fan directed over the patient's extremities, represent substitutions for a cold room. Such measures should be adopted if a crisis develops and a cold room is not available. Adequate sedation, utilizing soluble barbitol compounds subcutaneously along with morphine, is very necessary. If morphine alone is used, the dose will usually have to be so large that serious anoxia will develop. Fluid is allowed by mouth but will rarely be retained if given in large quantities, since vomiting is a fairly constant manifestation of crisis. Liberal amounts of calcium and thiamin (parenterally) may likewise be given.

PROGNOSIS AND MORTALITY RATE

In general the mortality rate is directly related to the thoroughness of preoperative preparation of the patient and to the proper choice of time for operation. As stated previously, preoperative preparation should achieve a gain in weight, with a reduction in pulse rate and basal metabolic rate. Stage operation should be utilized when operability is doubtful. I wish to emphasize, however, that stage operation it-

self does not solve the problem of operability. In other words, if a patient is severely toxic and poorly prepared, removal of one lobe may be fatal, just as a bilateral thyroidectomy would be fatal.

As noted in table 2, 833 thyroidectomies have been performed* in the past six and a half years. The mortality rate for the entire series was 1.08 per cent. Strange as it may seem, the mortality rate in the toxic diffuse group was lower than in the non-toxic nodular patients. This is probably explained by the fact that patients with toxic diffuse goiter are usually young, whereas many of the patients who were operated on for non-toxic goiter were aged individuals with a more fragile heart. A

TABLE 2
TYPES OF GOITER AND MORTALITY
(1936 to 1943)

Type	Opera- tions	Deaths	Mortality per cent
Toxic diffuse	390	3	0.76
Toxic nodular	264	4	1.5
Non-toxic nodular	179	2	1.1
Total	833	9	1.08

study of the nine deaths reveal that two succumbed to crisis, one to gas gangrene of the buttocks, one to postoperative hemorrhage, one to tetany, one to acute hepatitis, one to a serious glucose reaction, and two to acute heart failure. The latter two patients who died suddenly from acute heart failure had non-toxic goiter. At least three of the four deaths in our series were preventable. Two of them developed crises. Neither of these two qualified for operation from the standpoint of the prerequisites described. They were operated on before we had developed the prerequisites which would have demanded more preoperative preparation in these patients.

In table 3, I have indicated the ratio of white to colored patients in the various groups. Of the entire group 9.1 per cent were colored. There is a slightly lower ratio of colored patients in the toxic nodular group. Surprising as it may seem, we had

no deaths in any of the colored patients. This is at variance with experience in the South where reports have indicated a higher mortality rate in the colored patients than in the white patients. It is difficult to arrive at a satisfactory explanation of this variance in mortality rate, unless the fact that a better nutritional status in the Northern negro is possibly an explanation.

TABLE 3
OPERATIONS FOR GOITER (EXC. CA)
RATIO OF WHITE TO COLORED

	Operations	Deaths
Toxic diffuse	W 350	3
	C 40 (or 10.3%)	0
Toxic nodular	W 247	4
	C 17 (or 6.4%)	0
Non-toxic nodular	W 160	2
	C 19 (or 10.5%)	0
Total cases	W 767	
	C 76 = 9.1%	
	833	

SUMMARY

The most important factor in maintaining a low mortality rate in toxic goiter is adequate preoperative preparation. To aid in teaching students when patients are ready for operation and to aid us in determining time of operation, we have established certain prerequisites which are designed somewhat on a mathematical basis. These prerequisites are: (1) gain in weight; (2) resting pulse rate below 110; (3) basal metabolic rate below 50; (4) response to iodine therapy, and (5) no untreated complications. I am convinced that adherence to rules of this type will maintain a low mortality rate.

END RESULTS IN THE SURGICAL TREATMENT OF GASTRIC CARCINOMA

HAROLD H. MORRIS, JR., M. D.
NEW ORLEANS

The purpose of this paper is to present the results of surgical procedures in the treatment of carcinoma of the stomach. This is a very important and serious condition, for nearly 40,000 persons died of carcinoma of the stomach in the United

*These operations have been performed at the Illinois Research Hospital.

states last year.⁴ More deaths are due to this form of cancer than to any other single type of malignancy.

HISTORY

Pèan in 1879 is the first person on record as having performed gastrectomy for cancer of the stomach. Unfortunately, his patient died five days after the operation. In 1880 Rydygier repeated this operation, but the patient died within twelve hours. Both these physicians were Frenchmen.

Even before this time Theodore Billroth had come to the conclusion that gastrectomy was the only logical form of treatment, but with typical German thoroughness he performed numerous operations on dogs before venturing to subject human patients to gastric resection. He performed the first successful gastrectomy on a human being in 1881. The patient survived five months. Even today the type of operation that Billroth devised is still being employed, and is called by his name.

When Welch made a survey of the world literature in 1885, he found only 37 gastric resections recorded, with 27 operative deaths and none of the ten surviving patients had lived for more than 18 months. He rather grimly concluded that "the operation is applicable only to the rarest case, offers only a faint glimmer of hope, is attended with a prohibitive mortality, and never cures permanently."

Welch listed six reasons why gastrectomy was not applicable to the average case: (1) The presence of distant metastases; (2) location of tumor unfavorable for removal; (3) too extensive a growth; (4) widespread adhesions; (5) extreme debility of patient; (6) necessity for a specially trained team.

Four years ago, Livingston and Pack¹ again reviewed the world literature. They were able to collect 14,000 cases of gastric resection from 1881 up to 1939. Approximately 3,000 of these operations were performed in the United States. Undoubtedly many other such operations were done in that time, but these other cases are not available for statistical study since they

never made an appearance in print. The analysis of these authors will be presented later in this paper.

Only the literature of the United States since 1939 bearing on gastric carcinoma will be briefly reviewed, since the work of Livingston and Pack is comprehensive and needs no amplification. An additional series of 155 cases of gastric carcinoma diagnosed at Charity Hospital in the last two years will be reported.

TREATMENT OF GASTRIC CARCINOMA

It is a matter of general agreement at the present time that the treatment of gastric carcinoma is a surgical problem from the start.² Non-recognition of this fact has been partly responsible for the poor results of treatment of this condition in the past.³

Boyce⁵ states that "one of the causes of the high mortality of gastric cancer is the success of the medical treatment of cancer which masquerades as ulcer. The basic problem, when once the patient presents himself to the physician, is how soon the physician turns him over to the surgeon, and how soon the surgeon operates." This reduces the question to the simplest terms as far as the trained medical profession is concerned, but the public must be educated to present themselves for examination. Oughterson¹⁴ of New Haven estimates that only 58 per cent of persons with gastric carcinoma ever enter a hospital. This estimate includes only the United States.

The sad fact seems to be that by the time a positive diagnosis is possible, the lesion is already inoperable in the great majority of cases. This is borne out by the observation that the resectability rate never approaches 50 per cent, even in the best institutions in the country.⁶ There are no symptoms pathognomonic of cancer of the stomach; the symptoms are suggestive, not conclusive.⁷

More and more surgeons and internists are making the plea that exploratory operation be performed before a positive diagnosis can be made. Gray,⁸ of the Mayo Clinic, has laid down certain criteria

which justify such a procedure. In brief, if the patient presents himself with an ulcer history and picture, operate if: (1) the ulcer is of short duration and the patient over 50 years of age; (2) the ulcer is over an inch in diameter; (3) no free hydrochloric acid is found in the stomach; (4) the ulcer is on the greater curvature or prepyloric area of the stomach; (5) any chronic ulcer on the lesser curvature. Ulcers not fulfilling any of the above conditions may be treated conservatively for a month, then operation should be performed if there is no improvement under the medical regimen. But it must never be forgotten that many malignant ulcers show clinical improvement with conservative medical therapy.

The problems of diagnosis are beyond the scope of this paper. The question is not simply one of performing an exploratory laparotomy in all cases of lesions of the stomach that are possibly malignant. Often, even when the surgeon sees the lesion right before him after entering the abdomen, he is unable to make a final differentiation between benign and malignant. As an example of this, J. R., a colored male, entered Charity Hospital in 1940 with an acute abdomen. He was immediately operated upon, and a ruptured peptic ulcer was repaired. Ten months later he died in the same institution at the age of 40 with generalized metastasis from a primary focus in the stomach. Such cases could be multiplied many times over, and I do not feel that the fault lies with the surgeon. Certainly a biopsy was contraindicated under such circumstances and it is often impossible for an experienced pathologist to distinguish benign from malignant on gross inspection.

Perhaps mistakes are made in the other direction quite as often. Thus, in another case, a palpable mass was felt in the abdomen, the patient was anemic, had lost much weight, and had symptoms of gastrointestinal obstruction. X-ray examination revealed a large constant filling defect at the pylorus. Gastric analysis showed no free hydrochloric acid in the stomach, and

yet at autopsy no evidence of cancerous activity could be demonstrated in the lesion. Even the radiologists admit that patients with resectable lesions often have no x-ray evidence of any lesion. This is particularly true when the carcinoma is at the cardia or in the fundus.¹¹

But these cases are the exception rather than the rule, and if any improvement is to be made in the prognosis for carcinoma of the stomach, it can only be brought about through operation on suspicion and better technic on the part of the surgeons.

TYPES OF OPERATIONS

In general, three types of surgical procedure are employed in gastric carcinoma. I shall not go into detail as to surgical technic. Suffice it to say that the patient may be explored; he may have some form of palliative procedure such as a gastroenterostomy; or an attempt may be made to extirpate the malignancy by subtotal or total gastrectomy. Often the final decision as to which type of procedure will be employed is not made until after the abdomen is entered.

As surgical technic and surgical care become perfected, more and more reports on total gastrectomy appear in the literature.⁹ The idea of performing a total removal of the stomach is not new. In 1875 Czerny hinted at this possibility, which was put into practice in 1883 by the American surgeon, Connor. His patient died shortly after the procedure was ended. Fourteen years followed before Schlatter performed the first total gastrectomy with temporary cure. Up to 1942 there are about 240 total gastrectomies recorded in the literature, with an operative mortality of over 50 per cent. This is a formidable procedure, and even at the Mayo Clinic, reporting 27 cases, the operative mortality has been 60 per cent. This type of operation is indicated when the whole stomach is involved as in sarcoma or linitis plastica, and in cases where the malignant lesion is found in the fundus or near the cardia. Needless to say, the growth must be restricted to the

stomach, and the stomach must not be bound down with adhesions.

Resection is usually reserved for those cases in which metastasis is not demonstrable at operation or is confined to a few adjacent lymph nodes. Zollinger,¹⁰ working at Peter Bent Brigham Hospital in Boston, says that "the presence of lymph node metastasis does not mean that the patient will not survive five years or longer." The presence of single or small metastatic lesions in the liver and the absence of metastasis elsewhere is not necessarily a contraindication to subtotal gastrectomy.¹⁷ With the newer advances in surgery of the pancreas, as developed mainly by Whipple and his associates, the resectability rate will undoubtedly increase. The head of the pancreas and other structures in the loop of the duodenum are common sites for direct extension of carcinoma of the pancreas.

It seems doubtful if total resection will ever play more than a minor role in the gastric cancer problem. By the time that so much of the stomach is involved that it must all be removed, the prognosis is practically hopeless. Paradoxically, the patient on whom the least amount of surgical procedure has to be practiced is the one who is likely to live the longest. Only five five-year cures have been reported of patients in whom the whole stomach was removed. Undoubtedly part of this poor result is due to the fact that linitis plastica is the most malignant lesion involving the stomach, and linitis plastica is one of the prime indications for total gastrectomy.

RESULTS OF OPERATION

The dictum laid down by Welch in 1885, as to the need for trained surgeons to perform gastric operations if good results are to be expected, still holds true. This particularly applies to the immediate operative mortality. The general surgeon who operates on only five or six cases of carcinoma a year probably does more harm than good. In spite of this, the similarity of end results in all large series reported is quite remarkable.

The figures¹² usually run something like

this: Of every 100 patients with gastric carcinoma entering hospitals in the United States today, 50 are inoperable. Twenty-five of the remainder have resectable cancer. Five of the 25 subjected to resection die an operative death. Of the 20 who survive operation, 14 are dead within three years, 16 are dead before five years, and we may then report five five-year cures from the original 100 patients. If the diagnosis were made early enough so that resection could be performed in every case, 20 of the original 100 would be alive in five years; twenty would also owe their deaths directly to the operation. The balance is almost perfect. Even if present operative mortality rates were cut in half, the total number of five-year survivals would only be increased by 2 per cent.

Perhaps the best figures in the country are those of the Mayo Clinic.¹³ In 1941, 277 operations were performed for malignant lesions of the stomach; 105 of these operations were partial gastrectomies, with an operative mortality of 13.3 per cent. The other 172 operations were divided as follows: 29 palliative procedures with a 6.9 per cent mortality; 122 explorations with a 3.3 per cent mortality; eight total gastrectomies with a total 50.0 per cent mortality; and 13 not specified.

For several years at this institution exploratory laparotomy has been advised routinely in all cases of malignant lesions of the stomach regardless of the extent unless there is obvious metastasis or the general state of the patient prohibits. A larger percentage of all patients with gastric carcinoma have been subjected to operation in the past few years, but there has been little change in the proportion of resections carried out to the total number of patients operated upon.

Emmett¹⁵ reports a series of 74 cases. Forty of these were inoperable when first seen. Thirty-four operations were performed. There were five explorations with a 40 per cent mortality; two died in the hospital and three died within a year. Five palliative procedures were tried, with a 20 per cent mortality; one died in hospital

and four died within a year. Twenty-four gastrectomies were performed, with a 20 per cent mortality; five died in hospital, five died within a year, five survived at least five years. Two of those who died in less than five years succumbed to other causes than carcinoma. Emmett's percentage of resections, nearly 70 per cent of the operable cases, is one of the highest recorded. He places the life expectancy of the unoperated cases in his series at only two or three months. Contrary to the general belief, he holds that anemia is a constant and early sign.

Zinninger¹⁵ reports 16 cases of total gastrectomy from the Massachusetts General Hospital in 1938, with a 50 per cent operative mortality. At the Cincinnati General Hospital between 1932 and 1936, 42 per cent of all patients with a diagnosis of carcinoma of the stomach were subjected to operation. Only 9 per cent of these operations were resections. In the period 1937-1939, 50 per cent of the patients were operated on, and the percentage of resections had risen to 43. Zinninger¹⁶ attributes the increase in resections to two main factors: (1) Earlier diagnosis and (2) better technic.

From South America, Amesti¹⁸ reports a series of 107 patients operated on for gastric carcinoma. Forty-three of these received subtotal gastrectomies, and nine underwent total gastric resection. Four of these latter died as a result of the operation, and of the five survivors, only one lived for more than 13 months, at which time the report was made.

In performing 16 subtotal resections, Sanders²⁰ has a mortality of two cases, and two five-year survivals. One of the most rapidly fatal types of carcinoma affecting the stomach is linitis plastica. In eleven cases judged inoperable when first seen,²² the longest period of survival after the first discernible symptom was 18 months. Fifteen patients with linitis plastica who underwent operation did not live more than three months after operation in any case, and only three of the 15 were thought to be resectable after the abdomen was opened.

Carcinoma involving the cardia and fundus is particularly difficult to diagnose preoperatively. Symptoms of obstruction are rarely present in this silent area, and a mass is seldom palpable. X-ray diagnosis is notoriously difficult when the lesion is high in the stomach. Such patients are usually candidates for total gastrectomy. Garlock³⁰ explored 25 patients who subsequently proved to have carcinoma in this area. Nine were resectable, and four of these died postoperatively. Four were still alive and without evidence of metastasis from seven to 18 months postoperatively at the time the report was made.

Between 1934 and 1939, 273 persons with gastric cancer were seen in Seattle.²⁵ Only 12 patients of this total were resected, and but six survived operation. In the succeeding years, this record has been improved. In 1940 there were 42 cases; 22 explored, 12 resected, with a mortality of 50 per cent. In 1941, of 67 cases; 30 per cent explored, 10 per cent resected, and 7.5 per cent of the total survived operation. In 1942, of 34 cases (records not complete for whole year) 10 per cent were explored and 8 per cent resected; all survived (three patients).

In 1942, Cole and Forsee²⁸ present 39 subtotal gastrectomies performed in the Army Medical Service, with only one operative death.

Saint⁹ has collected 250 cases of total gastrectomy performed in this country. Of these, 88 were before 1933 and entailed an operative mortality of 50 per cent. Since then, three comparatively large series attest the growing frequency of this type of operation; Mayo Clinic, 27 cases with 60 per cent mortality; Lahey Clinic, 55 cases with 30 per cent mortality, and Massachusetts General Hospital, 80 cases with 40 per cent mortality.

Finally, briefly reviewing the conclusions of Pack and Livingston,¹ the average resectability of carcinoma of the stomach is 18.7 per cent, which is to be compared with Billroth's original estimate of one in 200 cases. The average mortality of gastric resection is 17.74 per cent, and the range from 5 to 52.6 per cent. The mortality was halved

during the last years of the study. One-third of the patients who survive operation are living at the end of three years, one-fourth at the end of five, and one-fifth at the end of ten years. Excision by the casual rather than by the specially trained surgeon almost doubles the mortality.

The incidence of resectable carcinoma in the United States is set at 10,000 per year, yet only 3,000 resections have been reported in this country. The American College of Surgeons has 1,279 five-year cures registered. Twenty per cent of patients dying of carcinoma of the stomach show no distant metastasis at autopsy. In 50 years, all definitive and long term cures have been obtained by gastrectomy.

This review of the recent American literature is in no sense complete, but it is fairly representative of the status of surgical procedures in the treatment of gastric carcinoma in the United States today. Most surgeons feel that death from metastasis is more merciful than death from the original gastric cancer. A rough tabulation of the series reported above follows:

Source	No. of cases	No. operated upon	No. resected	Mortality resection
Mayo		277	105	13.3 %
Emmett	74	34	24	20 %
Cincinnati		50 %	20 %	
South America		107	52	
Sanders			16	12.5 %
Seattle	143	47	22	6 cases
Army			39	1 case

CHARITY HOSPITAL SERIES (33.5)

The patients at Charity Hospital form a large group mainly coming from the lowest economic classes. They usually do not present themselves for medical treatment until the last stages of disease. The resident staff is constantly changing, and of minor experience as far as major abdominal surgery is concerned. This represents the darkest side of the history of gastric cancer. The following series of figures is largely self-explanatory. From 1922 to 1931 inclusive, there were 758 patients

treated at Charity Hospital for gastric cancer; 245 died in the hospital, 32.3 per cent; of 533 not operated upon, 70.3 per cent, 148 died in hospital, or 27.7 per cent. Of 275 patients operated on, 29.7 per cent, 97 died in hospital, or 43 per cent. Of the last 200 patients operated upon, 90 died in the hospital, 16 were discharged possibly cured; 86 per cent were males, 8.5 per cent below 40 years of age.

In every case, preoperative diagnosis was possible, due to the advanced stage of the disease. It is of interest to note that 25 per cent gave a typical ulcer history extending over several years, whereas a large majority of the rest, 125 cases, had symptoms of less than six months' duration. Maes feels that the determination between gastric ulcer and gastric cancer is impossible by any known means short of surgical exploration, and it is not always easy or possible then. Almost the only thing common to the majority of these patients was a marked loss of weight, a loss that is always more pronounced in gastric cancer than in any other disease which gives rise to gastric symptoms. Jaundice is a late and ominous sign. In only 85 of the patients operated upon was a mass palpable before operation. Maes bids us regard with suspicion: (1) An indigestion after middle life in a previously well person; (2) any acute digestive disturbance after middle age superimposed on chronic digestive disturbances not responding promptly to medical treatment; (3) vague general symptoms.

A more detailed analysis of 200 surgical cases: Gastrectomy, 35 patients, 51.4 per cent mortality; exploration, 56 patients, 30.4 per cent mortality; palliative procedure, 104 patients, 43.6 per cent mortality.

The only patients who can be considered to have a successful follow-up in the Charity Hospital records are those who died in the hospital.

From 1932 to 1940 inclusive, there were 1,163 patients treated at Charity Hospital for gastric cancer. Of these, 356 died in the hospital; of 829 not treated surgically, 218 died in hospital. Of 344 patients operated upon, 138 died in the hospital. Of

200 surgical cases with 82 deaths, 77 were palliative procedures with 35 deaths; 68 were explorations with 16 deaths; 55 were gastrectomies with 31 deaths (56 per cent).

Boyce concludes that the increased number of gastrectomies in comparison with the decreased number of gastroenterostomies from the first series is a reflection of the conviction that gastroenterostomy has a very limited field and often is little more than a hopeless procedure which enables the patient to live longer and suffer more; whereas gastrectomy, with only a slightly greater risk, offers a much greater prospect of temporary relief if not of permanent cure.

The status of but 20 patients, out of the total of 400 reported, is known. Thirteen died within four years, two of these deaths being due to incidental causes. Two are known to have hopeless metastasis at the present. Five were alive and without apparent recurrence when last seen eight months up to 11 years after operation.

From 1941 to 1942 inclusive, there were 155 patients treated at Charity Hospital for gastric cancer. Of these, 58 died in the hospital. Seventy-eight were not treated surgically and 37 died in the hospital. Out of 77 treated surgically, 21 died in the hospital. Although the mortality of those treated medically was considerably higher than those treated surgically, it would be wrong to infer that operative procedures were responsible for the difference. Most of the non-surgical cases were moribund on admission, while the surgical cases were in comparatively good health.

An analysis of 77 operations reveals the following: 25 explored, with three operative deaths; 27 palliative procedures with five operative deaths; 25 subtotal resections with four operative deaths.

Apparently surgical technic has improved considerably at Charity Hospital since the last analysis was made. In every type of operation the mortality rate has dropped significantly, yet a larger proportion of the

total admissions is being treated surgically. We feel that this is a very hopeful sign. When the first series was reported by Maes, more than ten years ago, the mortality at Charity Hospital was the second highest in the country in the large number of series reported by Pack and Livingston. At the present time, the mortality figures compare favorably with those from any similar institution in the United States.

Follow-up reports on the 21 patients surviving gastric resection have in most cases been very inadequate. One died seven weeks postoperatively. Six more had evidences of metastases at intervals varying from three to 25 months following operation, with an average of thirteen months. Twelve had no evidence of metastasis when last seen, but this figure is of little significance, as the longest follow-up was six months. Most patients are lost sight of the day they are discharged from the hospital.

In the series covering the last two years, there were 105 males and 50 females; 67 were white and 88 were colored. All ages from 27 to 94 were represented, with 98 cases in the fifties and sixties. Twelve patients were under 40 years of age and of these 12, six were males and six females. It is hardly valid to draw conclusions from such a small series, but in general the younger the patient the more fulminating the cancer.

In only two cases was the diagnosis missed. One patient was thought to have a malignancy who later proved to have a benign ulcer at autopsy, and one patient was thought to have a perforated ulcer when the lesion was malignant. A mass was palpable in the epigastrium in nearly 50 per cent. Anemia and loss of weight were almost constant findings. Pain in the epigastrium was the most common chief complaint, but almost every conceivable symptom is recorded in the history sheets.

The following table compares the three series reported from Charity Hospital:

CONCLUSIONS

1. Gastric cancer is a common and highly fatal disease.

2. Improvement in its treatment will have come about through earlier operation rather than better surgical technic.

3. The treatment is surgical

4. Five per cent five-year cures may be expected today, considering the disease as a whole.

6. Twenty per cent five-year cures may be expected today considering the disease from a surgical point of view.

7. Of the estimated 10,000 resectable cases in the United States each year, only 3,000 cases have been resected in the past 60 years.

8. One thousand two hundred and seventy five-year cures following operation are on record.

9. The technic of gastric surgery at Charity Hospital has improved in the last ten years.

10. Gastric carcinoma cannot be cured by operation, but the life expectancy of the patient may be considerably lengthened.

REFERENCES

1. Livingston, E. M., and Pack, G. T.: End Results in the Treatment of Gastric Cancer, New York, Paul B. Hoeber, 1939.
2. Horsely, J. S.: Some aspects of carcinoma of the stomach, *Mississippi Doctor*, 20:386, 1943.
3. Walters, W., Gray, H. K., and Priestly, J. T.: Malignant lesions of the stomach, *J. A. M. A.*, 117:1675, 1941.
4. Vital Statistics: Special Reports, Dept. of Commerce, 12:241, 1941.
5. Boyce, F. F.: Cancer of the stomach in a large general hospital, *J. A. M. A.*, 117:1670, 1941.
6. Snyder, H. E.: Cancer of the stomach, *J. Kansas M. S.*, 43:58, 1942.
7. Golob, M.: Cancer of the stomach, *Rev. Gastroenterol.*, 9:120, 1942.
8. Gray, H. K.: Diagnosis and treatment of cancer of the stomach, *Surg., Gynec., & Obst.*, 74:487, 1942.
9. Saint, J. H.: Total gastrectomy for carcinoma, *West. J. Surg., Obst., & Gynec.*, 51:10, 1943.
10. Zollinger, H. M.: Discussion of reference 3.
11. Editorial: The problem of gastric cancer, *Radiol.*, 40:198, 1943.
12. Pack, G. T.: Discussion of reference 3.
13. Walters, et al.: Report on surgery of the stomach and duodenum, *Proc. Staff Meet. Mayo Clinic*, 17:420, 1942.
14. Oughterson, J. M.: Discussion of reference 3.
15. Emmett, J. M.: Surgical treatment of cancer of the stomach, *Southern Surgeon*, 11:154, 1942.
16. Zininger, M. M.: Cancer of the stomach, *Surg., Gynec., & Obst.*, 76:375, 1943.
17. Meyer, H. W.: Total gastrectomy, *Surgery*, 12:115, 1942.
18. Amesti, F. D.: Total gastrectomy, *Ann. Surg.*, 117:183, 1943.

SUMMARY

An outline of the history of the surgical treatment of gastric carcinoma from the time of Theodor Billroth up to the present is presented. Since 1880, the frequency of operation for this common condition has been steadily increasing. Operative technic has improved, and there is general agreement that operation is the treatment for carcinoma of the stomach. The average doctor must be on the lookout for the earliest signs of gastric malignancy. At Bellevue Hospital in New York, there have been three times as many admissions for gastric carcinoma as for gastric ulcer.

A few representative series from different parts of the United States reported in the last two years have been included. The work up to that time has adequately been covered by Livingston and Pack. Fifty per cent of the patients seen in hospitals are inoperable. Only 25 per cent have resectable cancer, and only 5 per cent may expect to live five years after the diagnosis has been made. But 20 per cent of the patients who recover from resection will live five years or more after operation. The average operative mortality rate in the United States today following gastric resection is about 20 per cent.

Finally, a series of over 2,000 cases seen in the last 20 years at Charity Hospital is presented. While the resectability rate at this institution has more than doubled, the operative mortality has been cut to one-third of what it was ten years ago. This improvement must in part be attributable to better technic and better preparation of the patients in the last few years.

	No. of cases	No. operations	No. explored	No. gastroenterostomies	No. resected	Mortality per cent
1922-1931	753	275	56	104	35	51.4
1932-1941	1163	344	68	77	55	56
1941-1942	155	77	25	27	25	16
Total	2076	696	149	208	115	

NOMENCLATURE

19. Walters, W.: *Carcinoma and Other Malignant Lesions of the Stomach*, Philadelphia, W. B. Saunders Co., 1942.
20. Sanders, R. L.: *Methods of partial gastrectomy*, South. M. J., 35:743, 1942.
21. Lahey, F. H.: *The bar record of cancer of the stomach*, The Lahey Clinic Bulletin, 3:2, 1942.
22. Saphir, O., and Parker, M. L.: *Linitis plastica*, Surg., Gynec., & Obst., 76:206, 1943.
23. Priestly, J. T.: *Carcinoma of the stomach*, J. Iowa St. M. S., 33:1, 1943.
24. Horsley, J. S.: *Some aspects of carcinoma of the stomach*, Virginia Med. Monthly, 70:18, 1943.
25. Methany, D.: *The curability of gastric carcinoma*, Northwest. Med., 42:12, 1943.
26. Marshall, E. A.: *Indications for gastric surgery*, Rev. Gastroenterol., 9:71, 1943.
27. Lahey, F. H.: *Address Before Medical Officers*, Army Medical Center, Washington, D. C., Jan. 1940.
28. Cole, F. L., and Forsee, J. H.: *Subtotal and total gastrectomy*, Military Surgeon, 90:353, 1942.
29. Abrahamson, R. H., and Hinton, W. J.: *Cancer of the stomach*, Surg., Gynec., & Obst., 71:135, 1940.
30. Garlock, J. H.: *Cancer of the cardiac end of the stomach*, Surg., Gynec., & Obst., 74:556, 1942.
32. Horsley, G. W.: *Gastric cancer*, Virginia Med. Monthly, 69:127, 1942.
33. Maes, Urban: *The tragedy of gastric cancer*, Ann. Surg., 98:619, 1933.

THE PATHOLOGY OF ARTERIOSCLEROSIS

GEORGE N. IRVINE, JR., M. D.
NEW ORLEANS

It is a well known fact that there are persons with more or less worn-out cardiovascular systems who live to a ripe old age. The widespread belief that arteriosclerosis is merely a manifestation of old age is not compatible with the known facts. The mere aging of vessels results in distention and dilatation and consequently in increasing tortuosity. But mere aging never results in deformations of the vascular wall and the vascular tube which are typical of arteriosclerosis.¹ Therefore, arteriosclerosis is not merely a change or transformation attending the process of aging but rather is a disease of the vessels manifesting itself mainly during senescence.

In discussing a subject as broad and full of controversy as arteriosclerosis, it is obviously necessary sharply to delineate the boundaries of the subject. Consequently it is my purpose to confine myself to a definition of the general term "arteriosclerosis", its general incidence, and to a discussion of its vascular pathology.

Various names have been used to describe this condition in the course of medical history simply because at different times the general interest centered on different aspects of the disease. Thus it is quite easy to understand that, while one investigator regarded the hardening of the vascular wall as the most important factor, another attributed prime significance to the deposition of fatty substances in the intima of large vessels. The former described the condition as a sclerosis, while the latter spoke of it as an atheromatosis. Since the underlying processes vary in different vascular regions in accordance with functional differences, some investigators even thought that they were dealing with entirely different diseases, because in one case the most pronounced phenomenon consisted of fatty degeneration or atheromatosis of the intima and in another, of calcification of the media. In view of the fact that experimentally induced changes take place mainly in the large arteries of the body cavities, in vessels of the elastic type, these changes were supposed to constitute typical arteriosclerosis. This picture was described by the term atheromatosis. The other changes were observed principally in the media of the peripheral vessels and they were described as calcification of the media (Mönckeberg's sclerosis). The condition was entirely separated from atheromatosis and was regarded by Mönckeberg as an altogether different syndrome. Marchand insisted, however, that both processes belong together, or at any rate, that they generally occur together even though they may vary proportionately. For this reason he has suggested the very acceptable term atherosclerosis.² The terms arteriosclerosis and atherosclerosis are synonymous and the former has gained its universality through usage.

INCIDENCE

It has been noted that arteriosclerosis is a very common disease which increases in frequency and severity with advancing age. In a series of three thousand bodies Ophüls³ found that there are only a few scattered

cases showing fairly well marked lesions during the first two decades. These were almost invariably associated with chronic nephritis. In the age group from 20-29, 3.5 per cent of the bodies examined showed moderate arteriosclerosis. The incidence of the disease rises rapidly from 9.25 per cent between 30 and 39, to 26 per cent between 40 and 49 years, to 48 per cent between 50 and 59, to 78 per cent between 60 and 69, and finally to 90 per cent in patients over 70 years of age. The clinical importance of the disease is clearly shown by some figures collected by Anitschkow in 1925. Among 618 deaths in patients over 50 years of age, death was due to arteriosclerosis in 132, to cancer in 177, and to infectious diseases in 118.

PATHOLOGY

Aorta: In studying the ordinary atheromatous changes in the aorta one finds a considerable variety of lesions which gradually merge into each other and therefore seem to represent various stages of development of the same process. If this is so, one is justified in assuming that the simplest lesions that one finds in those parts of the vessel which are relatively intact, represent the earliest stages of the process. They bear a considerable gross resemblance to the fatty spots which Lange² describes, although microscopic examination reveals that the histologic changes in them are more severe and perhaps slightly different in character.

These early lesions, which are present in every atheromatous aorta, consist of small round grayish or yellowish spots, measuring a few millimeters in diameter. They usually project slightly but distinctly on the inner surface of the blood vessel. They exhibit a marked tendency to fuse and form larger, rounded or irregular plaques which project more definitely into the lumen. In the course of time the surface of many of these plaques becomes milky white by the development of the fibrous tissue, while the fatty parts in the depth of the lesions break down and form the mushy material from which the condition has received its name (athere—Greek for mush). From this

point on further change may take place in two directions; either the surface is permanently sealed by the deposition of a calcareous plate or the degenerative process in the depth gradually extends to the surface through the fibrous opening. When the softening eventually reaches the inner surface the atheromatous masses are partly washed away by the blood stream. In this manner there are established ragged ulcerative defects at the bottom of which there always remain considerable remnants of necrotic material.

Concerning the localization of the process one usually finds the most advanced lesions in the abdominal aorta whence they may extend into the iliac arteries. The thoracic aorta is usually less severely affected but it is frequently more or less markedly involved. In the descending part of the thoracic aorta the plaques are most marked on the posterior wall around or in the vicinity of the openings of the intercostal arteries. The base of the aorta is often relatively intact but in severe cases fully developed lesions may be present throughout the entire aorta and the proximal parts of its larger branches.

Microscopic examination of early patches reveals a moderate diffuse fibrous thickening of the intima which is most marked at the point of the gross lesion. Here the intima is sometimes more than twice its normal thickness. The thickened intima always contains many star-shaped cells which are filled with minute fat droplets. These consist of both connective tissue cells and spherical fat-carrying histiocytes which Leary⁴ refers to as "fibrolipophages" and "globular lipophages," respectively. The fatty change frequently starts in the musculo-elastic layer but this is not always the case. Sometimes it is more marked in the superficial layers of the intima. The amount of lipoid material in the tissues varies and bears no direct relation to the amount of fibrous thickening. The intima may be considerably thickened and yet contain relatively little fat. The diseased tissue may contain a few lymphocytic cells. From the beginning a peculiar type of necrosis is seen

in the fibrous tissue. By it the fibrillated collagen is transformed into a finely granular material which tends to give the staining reaction for calcareous material with hematoxylin. This type of necrosis is not necessarily preceded by a fatty degeneration of the intimal cells. It is patchy in character and usually limited to the deeper layers but it may extend to the surface. In most of Ophül's³ frozen sections there was also present a diffuse change in the muscular tissue of the media which consisted of straight hyaline streaks parallel to the course of the elastic membranes and the muscle cells. The vasa vasorum frequently show a slight perivascular round cell infiltration. The adventitia is little affected in any stage of the disease, except in aneurysmal formation when it becomes greatly thickened.

Winternitz, Thomas, and LeCompte,⁵ in a highly provocative monograph, have brought forth strong evidence that the old and recent evidences of hemorrhage so commonly seen in the intima and the walls of sclerotic vessels are not artefacts but the result of rupture of the vasa vasorum. The vasa vasorum normally arise from three sources, the adventitia, the region of the orifices of the branches of the vessel, and directly from the lumen. These vasa vasorum increase with age and disease, and in arteriosclerotic vessels the pattern becomes very extensive. These intimal hemorrhages are of significance because they abound in just those regions which are the sites of predilection of arteriosclerotic lesions. They postulated three factors in relating these vessels to the arteriosclerotic process, namely, vascularity, hemorrhage, and sclerosis. When intra-mural hemorrhage occurs, the possibility of absorption of the mass of serum, fibrin, and cells diminishes greatly as the viability of the tissue in which they are deposited is reduced, especially when one considers that hemorrhage may continue and add fresh increments. Organization of the blood mass is also dependent upon the potentialities of the surrounding tissue, and if absorption or organization is not complete, the residuum remains as a ne-

crotic focus. Winternitz and his associates have demonstrated the suspicious character of an "atheroma" deep in the vessel wall, which is not grey or indifferent in color, but which histologically shows masses of amorphous material containing disintegrated red blood cells, fibrin, and mononuclear cells filled with blood pigment. At the periphery of such an area, the open ends of vessels may be seen; these often contain fresh blood and suggest the source of hemorrhage. Through the study of many lesions of this sort, these men feel certain that while hemorrhage, and perhaps lesser exudations are not the only source of the materials that form atheroma, they are potent contributing factors.

In atheroma the fatty changes are first confined to the intima but later the muscle cells of inner layers of the media are also found filled with minute droplets of fat. There has been some discussion as to whether the fat is also primarily deposited in the ground substance of the interstitial tissue, possibly also in connection with degenerating elastic tissue. Ophüls³ believes that the fat droplets do not appear outside of cells until the cells containing them have undergone necrosis and disintegration, when they become widely scattered in the interstitial tissue. Anitschkow² and Leary⁴ are of the opinion that there is a deposition of isotropic fat in the swollen ground substance and that this deposition is soon followed by the appearance of the latter's "lipophages" and "fibrolipophages."

Ordinarily, the proliferation of fibrous tissue is most marked in the superficial layers of the intima. Here a considerable amount of dense hyaline fibrous tissue is developed which covers the degenerative processes in the depth of the lesion. The latter have a tendency to go on to necrosis. This development of fibrous tissue gives the atheromatous plaques their milky white covering through which one can often see the yellow degenerated focus underneath. The new fibrous tissue itself may also become involved in the fatty change.

The necrosis at the base of the thickened intima eventually becomes quite extensive

and often involves the larger part of the plaque, including the superficial layers of the media. In exceptionally severe cases the degeneration and necrosis may extend far down into the media, leaving only a narrow zone of muscle and elastic tissue adjacent to the adventitia.

The necrotic material is finely granular and contains many irregularly scattered fat droplets of varying size and numerous cholesterol crystals. The latter are believed to be the result of a chemical splitting of the lipid material into fatty acids and cholesterol. While the former are saponified and absorbed, the latter, being very sparingly soluble, drops out in crystalline form. The necrotic tissue also contains much calcareous material in the form of minute granules. It has been pointed out by Lange² that these degenerative changes are not characteristic of atheroma but occur likewise in any mass of degenerating connective tissue.

The fibrous covering of the atheromatous necrosis may be destroyed by a gradual extension of the necrosis and softening from the depth to the surface. As already mentioned, when the latter is reached the soft atheromatous material is washed away by the blood stream and an ulceration is established with ragged overhanging edges. The bottom of the ulcer is covered with remnants of necrotic material which may be distinctly glistening on account of the presence of cholesterol crystals. The ulcers are rarely deep enough to cause bulging or perforation of the aortic wall.

In other places the superficial fibrous tissue of the plaque undergoes necrosis en bloc and is calcified, forming a hard calcareous plate which permanently seals the atheromatous lesions. In the living connective tissue adjoining the area of calcification development of bone tissue may take place, consisting of bone spicules and fatty or cellular marrow.

EXPERIMENTAL ARTERIOSCLEROSIS

It is interesting to compare these human lesions with the experimental changes produced in the aorta and large arteries of rabbits by feeding them cholesterol or sub-

stances rich in cholesterol, such as egg yolk or brain tissue. These experimental lesions were discovered by Ignatowski^{2, 13} in a series of rabbits that had been fed on milk and egg yolk. He attributed them to a protein content of the diet. Anitschkow and Choladow,² however, recognized that they were due to the cholesterol content and reproduced them by feeding the animals pure cholesterol. The results of these early workers have since been confirmed by many other investigators.

In experimental animals the changes in the aorta have the same patchy distribution as the atheromatous lesions. In contrast to the latter they are usually more numerous and larger in the thoracic aorta than in the abdominal portion. They consist of slightly raised yellow spots and microscopic examination reveals that the intima is infiltrated with lipid droplets which are found in connective tissue cells and in large mononuclear phagocytes. The normal intima of the rabbit's aorta is very thin and contains little connective tissue. The thickening of it is partly due to the development of new cellular fibrous tissue. As a result of this and of the infiltration with lipoids the intima may become as thick or thicker than the media. Ordinarily the microscopic appearance of the lesions resembles most closely that of the fatty streaks in man and there is an absence of the severe degenerative changes of the atheroma. Necrosis in the depth of the thickened intima followed by precipitation of cholesterol crystals and calcification has, however, been seen in old lesions by Bailey.^{6, 14}

Although Anitschkow is perfectly aware of many of the differences between experimental cholesterol arteriosclerosis and human arteriosclerosis, nevertheless, he is convinced that the two are identical² and his views have attained wide acceptance.

There are, however, many reasons why experimental atherosclerosis differs from human arteriosclerosis. The lesions thus far have been exhibited only in herbivora. Carnivora are not amenable. The reason may be as Schoenheimer² has suggested, that herbivorous animals cannot excrete

cholesterol. Cholesterol atheromatosis is produced under physiologic conditions that are not even approached by man. It always requires a marked cholesterolemia to produce the characteristic changes in the rabbit, while in most cases there is no relation whatever between the degree of arteriosclerosis and the blood level of cholesterol in man.^{7, 8} That a true clinical atheromatosis may occur in man is suggested by the rare cases described by Montgomery and Osterberg⁹ of xanthoma tuberosum, associated with a high degree of cholesterolemia. Land and Sperry¹⁰ compared the concentration of cholesterol in the blood serum and the degree of arteriosclerosis in 123 healthy persons who died suddenly from violence and no relationship was evident. Furthermore, in the experimental disease the lipid deposits are ordinarily not limited to the aorta and larger blood vessels but are also found in the adrenal cortex, the liver, the spleen, and the kidneys. Such lesions have never been found in man. The renal arteries which are practically always affected in human arteriosclerosis are seldom involved in experimental arteriosclerosis, while the cerebral arteries are never involved. In addition, as Duff¹¹ points out, lipid depositions within the media occur early in experimental arteriosclerosis and are late phenomena in the human variety. In summary, there is increasing doubt whether cholesterol arteriosclerosis represents human arteriosclerosis.

Many other experimental methods have been tried to produce human arteriosclerosis. Newburgh and Clarkson¹² produced arteriosclerosis by a high protein diet, but in a later publication they admit that the protein acted only indirectly by causing a hypercholesterolemia. Saltykow² injected staphylococci, but his positive results have never been confirmed. Bailey¹⁴ injected diphtheria antitoxin, but obtained only medial calcification. Klotz¹⁵ found arteriosclerosis in rabbits which were suspended by their hind legs over a prolonged period, thus causing an increased cephalad pressure, but his experiments have never been confirmed. The probability is strong that

some of the investigators ignored the occurrence of spontaneous arteriosclerosis in some animals.

Pulmonary artery: Lesions very similar to those of the aorta are found more rarely in the pulmonary artery. It is generally recognized that this disturbance may be divided into two forms, namely a secondary form and a primary form. Generally speaking, it is a disease of early adult and middle age rather than that of advanced years. Primary arteriosclerosis of this artery is very uncommon as indicated by MacCallum,¹⁶ whose case was the first he had seen in 12,000 autopsies. Hence, this lesion will not be described. The lesions of the secondary variety are usually much less severe in character, consisting of slightly raised yellow plaques of the usual structure. The amount of new fibrous tissue, as a rule, is limited and calcification and ulceration are unusual. A special study of the histological changes was made by Torhorst and Ophüls³ quotes his description. According to him the intima normally consists of two layers: an elastic muscular and an elastic fibrous one. Even in apparently normal arteries he observed calcification and degenerative processes in the media. Independently of these alterations in the media, he found fatty spots in the intima in which the lipid material was present in the ground substance and in connective tissue cells and large mononuclear phagocytes. In sclerosis there was a marked thickening of both layers of the intima, especially of the fibrous inner portion. He believed that the fatty degeneration follows the intimal thickening. The prominence of the spots is primarily due to the accumulation of fat, later to hyaline swelling and proliferation of the fibrous tissue. There were only slight degenerative changes in the media.

Atheromatous spots are also frequently present in the large muscular arteries. They are quite common in the coronary, cerebral and renal arteries; less so in the splenic, mesenteric arteries and in the branches of the celiac axis. Similar lesions in the arteries of the extremity do not as a rule contain as much lipid material. In

all muscular arteries, except for the early stages, there is a much more marked involvement of the media. This is believed to be the reason why the diseased arteries are often diffusely or more irregularly dilated and stretched longitudinally, a condition that is especially common in the splenic artery. This stretching may go on to true aneurysmal dilatation, although it is generally known that the development of aneurysm on the basis of simple arteriosclerosis is not a common occurrence. While the larger arteries usually exhibit this tendency to dilatation, the smaller ones tend to become narrowed by the atheromatous plaques and completely occluded by secondary thrombosis.

CORONARY ARTERIES

Wolkoff² has made a careful study of the histologic structures of the coronary arteries at different ages. Wolkoff found that there is an early splitting of the internal elastic membrane. In the large branches the intima is relatively thick and, like that of the aorta, consists of a musculo-elastic, fibro-elastic and a fibrous layer. The development is already well advanced at 15 and finished by 30 years of age. The media contains much elastic tissue and there is no definite external elastic membrane. A large amount of elastic tissue is present in the adventitia. It is evident from her description that the large branches of the coronary arteries resemble partly the elastic and partly the muscular arteries.

According to Wolkoff, the early stages of arteriosclerosis in the large branches of the coronary arteries are very much like those of the aorta. Microscopic sections show an irregular fibrous thickening of the intima with marked lipoid infiltration. In course of time the development of fibrous tissue is very marked. At first the new tissue is very cellular and shows a considerable irregular infiltration with lymphocytes. The vasa vasorum and the adventitia also show marked perivascular round cell infiltration and the adventitia becomes somewhat more dense and fibrous. Areas of necrosis and softening make their appearance in the depth of the thickened intima. The intimal proliferation is often sufficient to

close almost completely the lumen of the diseased vessel, a final complete closure resulting from thrombosis.

Calcification, which is frequent, occurs in the degenerated parts of the intima, not the media. The latter in the late stages is very thin, apparently as a result of compression. The dividing line between muscle and fibrous tissue may remain sharp and is indicated by remnants of the internal elastic membrane. In other places, however, the internal elastic membrane is destroyed and the muscle deeply invaded by the proliferating fibrous tissue. In some places this may lead to a complete destruction of the media. Grossly, the arteries become palpably stiff and may exhibit more or less widespread calcification, giving the impression of "corduroy" or "pipe-stem" arteries.¹⁷ Examination of the interior discloses fibrous or fibrolipoid plaques of variable extent associated with variable degrees of narrowing of the lumen. In some instances, however, the arteries are obviously dilated. Tortuosity of the coronaries is a phenomenon which accompanies reduction in the size of the heart and may affect normal or sclerotic arteries. Sometimes, as in the temporal arteries, coronary sclerosis is associated with elongation and tortuosity even in hypertrophic hearts. The small intra-muscular branches very rarely show any arteriosclerotic changes.

CEREBRAL ARTERIOSCLEROSIS

The brain is one of the common locations of arteriosclerosis. Mott¹⁸ places cerebral arteries fifth in order of occurrence of eleven commonly elected location. Thomas¹⁸ places them fourth in a list of fifteen. Cerebral arteriosclerosis usually occurs alone, especially in vessels at the base, and in not over 10 per cent of cases is it accompanied by generalized vascular disease. Neuberger² classifies cerebral arteriosclerosis from a pathological point of view:

1. Sclerosis of the larger arteries, especially the vessels at the base and the larger branches in the cerebrum, cerebellum, brain stem, basal ganglia and choroid plexus. It is rare in vessels of the cortex. Histologically this type resembles sclerosis as found in the systemic septum.

2. *Arteriosclerosis*: This is the diffuse hyperplastic sclerosis of other authors. It affects only the arterioles and capillaries, and is chiefly found in the cortex, grey nuclei and medulla. The process is in most part intimal and the chief characteristic is hyaline degeneration of the vessel walls. The endothelium may swell with fine fat droplets, and the lumen is narrowed; the media and adventitia are affected later.

3. *Calcification*: In true arteriosclerosis calcification occurs as a late stage, following fatty degeneration, chiefly of the intima.

VISCERAL ARTERIOSCLEROSIS

The arteriosclerotic changes in the trunks of the renal arteries do not show marked peculiarities.² The smaller branches within the renal tissue, however, react very differently. In them the thickening of the intima is due to a large extent to the development of new elastic tissue. There is some development of new elastic tissue in all arteriosclerotic arteries, but in the branches of the renal arteries the thickened intima consists almost entirely of superimposed new elastic membranes which seem to be split off from the internal elastic membrane. Oppenheim² has investigated this new elastic tissue and believes that it is to a great extent a physiologic process caused by the larger amount of blood which passes through the kidney with advancing age. The condition is pathologic, he believes, when there is added degeneration of the elastic tissue, proliferation of the fibrous connective tissue and a certain, although usually limited, amount of fatty degeneration.

From his own observations, Ophüls³ thinks it more accurate to describe separately the lesions which occur in the interlobular arteries, intralobular arteries and the arterioles. In the larger branches the development of new elastic tissue is the most prominent feature. He believes that this is to some extent physiologic but when there are as many as four to eight superimposed layers, he becomes skeptical and states that the process is not normal. In chronic hypertension the intima is much thicker and there is much more elastic tissue than in non-hypertension of the same age. The

thickened intima seldom shows degenerative changes. Intimal thickness and medial fibrosis decrease from the larger to the smaller arteries. The primary change in the arterioles is in a form of hyaline and the muscular coat. This hyaline material stains quite diffusely with Sudan III but Ophüls believes it doubtful whether this necessarily indicates the presence of a lipoid material. The hyaline material later may be replaced by concentric layers of fibrous tissue and sometimes there is a definite increase in the elastic tissue. The latter is particularly noticeable in cases of advanced general arteriosclerosis without serious renal involvement.

Staemmler² has studied the splenic artery at different ages. The main splenic artery frequently shows a severe sclerosis. It is very commonly dilated and unevenly distended, showing numerous small saccular aneurysms, which rarely burst. The structure of the main artery has not been studied extensively, but it is known that medial calcification and intimal arteriosclerosis are frequent. The changes in the splenic artery and its larger branches correspond to those found in other muscular arteries of corresponding size; however, the smaller branches show a hyaline degeneration that seems to be largely dependent of arteriosclerosis elsewhere.

Typical diffuse arteriosclerotic changes like those seen in the small renal arteries are frequently observed in the pancreas. They may be associated with a hyaline degeneration of the arterioles, which may extend to the blood vessels of the islands of Langerhans and cause a progressive destruction of those bodies.

Schmiedt² reviewed the changes found in different age groups from birth to over 90 years of age of superior mesenteric arteries. He states that no sharp line can be drawn between the physiologic changes with age and pathologic sclerosis. The lesions which he describes consist in early progressive splitting of the internal elastic membrane followed by fibrous thickening of the intima with development of elastic fibers and hyaline changes and a fibrosis of the media

sometimes accompanied by calcification. Fatty deposits were rarely seen. The changes begin in the trunk and spread in the periphery. Kummel's studies indicated that the inferior mesenteric artery was involved even to a lesser extent.

The gastric arteries¹⁹ in case of ulcer in relatively old individuals often show an endarteritis. In the chronic cases in elderly individuals the changes are very much like those of ordinary arteriosclerosis.

ARTERIES IN THE EXTREMITIES

The physiologic changes in the arteries of the extremities, as represented by radial artery, were studied by Hallenberger,² who found that between 20 and 30 years of age there is already a reduplication of the internal elastic membrane. In the course of time 3 or 4 layers may be found in this manner. The development of fibrous tissue in later years he regards as pathologic, while Thayer and Fabyan²⁰ are of the opinion that this is still physiologic. Their tables show a progressive diffuse thickening of the intima from birth to old age with onset of connective tissue development especially notable in the fifth decade. The presence of regressive changes such as necrosis, calcification and atheroma is, of course, evidence of a pathologic process. On the whole they found little evidence of fatty change.

In senile gangrene the arteries of the lower extremities show advanced degrees of arteriosclerosis with progressive obliteration of the lumen. Microscopically, sections reveal that the intima is greatly thickened by the development of fibrous and to a lesser extent of elastic tissue. This thickening is usually irregular and as a result the narrow remaining lumen is situated eccentrically. In the depth of the thickened intima there are areas of fatty degeneration and necrosis with deposit of cholesterol crystals. The degeneration and necrosis often extend deeply into the media where the muscle is gradually crowded out by the new fibrous tissue development. The adventitia may participate in the fibrosis. The arteries are often calcified by the development of circular solid deposits of cal-

careous material at the more or less obliterated dividing line between the intima and media. This causes a pipe-stem appearance of the arterial wall. The final complete closure is usually due to thrombosis.

Similar changes occur in the arteries of the lower extremities somewhat prematurely in the case of diabetes mellitus, although in certain cases of diabetic gangrene the large arteries are free from disease and the obstruction is in the small arteries of the foot which on microscopic examination show a marked obliterative endarteritis.

Joslin^{21, 22} made a careful study of the relation of diabetes to arteriosclerosis. He found it in the coronaries in 19 per cent and in the legs in 13 per cent of his fatal cases. Arteriosclerosis increases with the duration of diabetes from 30 per cent in patients who have suffered from diabetes for five years to 68 per cent in patients who have had the disease for 30 years or more. Sclerosis of the retinal arteries appears relatively early and is usually frequent. He attributes the great prevalence of arterial disease in diabetes to the hyperlipemia.

MONCKEBERG'S SCLEROSIS

In the arteries of the extremities a different type of arteriosclerosis is often found and attention was first called to it by Mönckeberg in 1903.² It consists in a primary necrosis and calcification of the media which is not necessarily associated with intimal lesions. This type of calcification is entirely different from the ordinary form observed in atheroma in its location and in its microscopic appearance. The calcification is deposited in ring form, affording a trachea-like appearance and sensation. The deposits may be plate-like or continuous over long stretches of the arteries. Mönckeberg found that this form of sclerosis is more common in the lower extremities than in the upper. In 55 cases,¹³ he found the femoral artery affected in 51, the tibial in 36, the radial in 21, and the popliteal in 15. In 500 individuals between 30 and 80 years of age, Lange found the femoral involved in 97 per cent, the posterior tibial in 87 per cent, the ulnar in 14 per

cent, the popliteal in 9 per cent, and the bronchial in 2 per cent.

It is still doubtful whether Mönckeberg's sclerosis is a different form of arteriosclerosis or whether they have a different etiology.^{13, 15} The latter is suggested by the fact that lesions of this character may be experimentally produced in rabbits by a method entirely different from that which produces atheroma in these animals. While the latter is due to lipid infiltration, medial necrosis followed by calcification was first observed in these animals by Josue² in 1903 after intravenous injection of adrenalin. He was doubtful whether they were of toxic origin or were the result of the rise in blood pressure produced by the injections of adrenalin. These findings have been confirmed by all later investigators except by Braun, who claims to have produced marked intimal lesions by long continued injection of very small doses of adrenalin. The toxic nature of the changes were demonstrated by Braun² who obtained the same results by the simultaneous injection of adrenalin and amyl nitrite which prevents the usual rise of blood pressure, as was shown by controlled experiments. Similar lesions were produced by injections of digitalis, irradiated ergosterol, viosterol and diphtheria toxin. These experimental results would seem to indicate that the lesions are of toxic origin. Moschowitz¹³ and Klotz¹⁵ also believe that these lesions are separate and distinct entities and are not to be considered as arteriosclerotic in origin. The two types of lesions, however, occur simultaneously so frequently in the same individual and in such topographic relation that Ophüls³ found it difficult to doubt that they are part of the same process.

An elaborate anatomical and clinical study of "hyperplastic sclerosis" has been made by Geoffrey Evans.²³ According to Evans the characteristic lesions of this condition are found in the arterioles and the small arteries. In the early stages the vessels show endothelial proliferation which in the arterioles is followed by an accumulation of hyaline material. The process may go on to complete closure of the lumen.

The small arteries from which the arterioles spring also at first exhibit signs of endothelial proliferation which is followed by the development of fibrous and elastic tissue. In both the arterioles and the smaller arteries the process is a diffuse one. The changes in them may occur independently of each other. An hypertrophy of the muscular wall is sometimes associated with the intimal lesions.

The distribution of these lesions in the various organs is at best capricious. They are most commonly found in the kidney, somewhat less frequently in the spleen. Evans found them in six out of 21 cases in the pancreas. They are comparatively rare in the brain and here usually restricted to relatively few arteries. The same is true of the liver, lungs and adrenals. He did not see them in the myocardium, stomach or intestines. He found diffuse hyperplastic sclerosis in all cases with marked hypertrophy of the heart, but it was also present in several cases without cardiac hypertrophy.

SUMMARY

Arteriosclerosis is a disease of the vessels and manifests itself mainly during senescence. Atheromatosis is a term that designates the intimal lesions of the large elastic vessels primarily and "Mönckeberg's sclerosis" is the term applied to the medial lesions of the muscular arteries. The terms atherosclerosis and arteriosclerosis are synonymous and are applied to the total process. Hyperplastic sclerosis cannot as yet be placed in the arteriosclerotic process. The syndrome is common and increases in frequency and severity with age. The earliest lesions of the atheromatous process are disputed but it is generally believed that they are identical or similar to the fatty streaks that are sometimes reversible. The pathology is that of lipid infiltration of the intima followed by fibrosis, necrosis and either the ragged atheromatous ulcer or the calcareous plaque results. The most common site is the abdominal aorta. Other common sites are the pulmonary, coronary, cerebral, and renal arteries. Experimental atheromatosis closely resembling the lesions

in man has been produced in the rabbit by feeding cholesterol. Some of the aspects of these experiments have been discussed and it is concluded that its relationship to human arteriosclerosis is still not clear. "Mönckeberg's sclerosis" is a primary necrosis and calcification of the media of muscular arteries which is not necessarily associated with intimal lesions. The lower extremities are most commonly affected. It has been produced with epinephrine, viosterol, and diphtheria toxin. Hyperplastic sclerosis is seen in arterioles and smaller arteries. It is a diffuse endothelial proliferation that is followed by hyaline infiltration.

REFERENCES

1. Ashoff, Ludwig: Lectures on Pathology, New York, Paul B. Hoeber, Inc., 1924.
2. Cowdry, E. V.: Arteriosclerosis, New York, The MacMillan Co., 1933.
3. Ophüls, W.: A Statistical Survey of Three Thousand Autopsies, Stanford University Press, 1926.
4. Leary, Timothy: Arteriosclerosis, Arch. Path., 21:461, 1936.
5. Winternitz, M. C., Thomas, R. M., and LeCompte, P.M.: The Biology of Arteriosclerosis, Baltimore, Chas. C. Thomas, 1938.
6. Bailey, C. H.: Atheroma and other lesions produced in rabbits by cholesterol feeding, J. Exp. Med., 23:69, 1916.
7. Wilder, J. A.: Diseases of metabolism, Arch. Int. Med., 41:298, 1918.
8. Peters, J. P., and Van Slyke, D. D.: Quantitative Clinical Chemistry, Baltimore, Williams and Wilkins Co., 1932.
9. Montgomery, J., and Osterberg, H.: Xanthomatosis: A systemic disease, Proc. Staff Meeting, Mayo Clinic, 12:64, 1937.
10. Land, R., and Sperry, P.: Human arteriosclerosis in relation to the cholesterol content of the blood serum, Arch. Path., 22:301, 1934.
11. Duff, J.: Arteriosclerosis, Arch. Path., 20:161, 1935.
12. Newburgh, L. H., and Clarkson, S.: The production of atherosclerosis in rabbits by feeding diets rich in meat, Arch. Int. Med., 31:653, 1923.
13. Moschowitz, Eli: Vascular Sclerosis, New York, Oxford University Press, 1942.
14. Bailey, C. H.: Arteriosclerosis and glomerulonephritis, J. Exper. Med., 25:109, 1917.
15. Klotz, O.: Compensatory hyperplasia of the intima, J. Exper. Med., 12:707, 1910.
16. MacCallum, W. G.: Obliterative pulmonary arteriosclerosis, Bull. Johns Hopkins Hosp., 49:37, 1938.
17. Karsner, H. T.: Human Pathology, Philadelphia, Lippincott and Co., 1925.
18. Albutt, T. C.: Diseases of the Arteries, New York, The MacMillan Co., 1915.
19. Ophüls, W.: The relation of gastric and duodenal ulcer to vascular lesions, Arch. Int. Med., 11:469, 1913.
20. Thayer, W. S., and Fabyan, M.: Studies on arteriosclerosis, Am. J. Med. Sci., 134:811, 1912.
21. Joslin, E. P.: Arteriosclerosis and diabetes, Ann. Clin. Med., 5:1061, 1927.
22. Joslin, E. P.: Arteriosclerosis in diabetes, Ann. Int. Med., 4:54, 1929.
23. Evans, Geoffrey: A contribution to the study of arteriosclerosis, Quarterly J. Med., 14:215, O. S., 1920-21.

ATYPICAL PNEUMONIA COMPLICATING SEVERE VARICELLA IN AN ADULT

L. E. RAUSCH, M. D.†

T. J. GRABLE, M. D.†

AND

J. H. MUSSER, M. D.†

NEW ORLEANS

It has not been generally appreciated that varicella may occasionally assume the form of a rather severe disease, although this was recently emphasized by Waring, Newbuerger, and Geever.¹ This seems to be true especially for adults. It is our impression that the common contagious diseases generally assume a more severe form when they occur in adults. Pneumonia occurring as a complication of varicella is not recognized as a common complication of this disease. Bullowa and Wishik,² in 1935, listed pneumonia as a complication in 0.8 per cent after an analysis of 2,534 cases in which complications occurred in 5.2 per cent. Pneumonia thus accounts for only about one-seventh of all the complications of chickenpox. The etiologic agent is listed by these authors as being almost always a streptococcus and most frequently *Streptococcus hemolyticus*.

We believe our case worthy of reporting because it represents an uncommon complication of varicella and because we believe the etiologic agent to be an unusual one.

CASE REPORT

Varicella; atypical pneumonia responding to sulfathiazole; complete recovery.

T. G., a 27-year-old physician at Charity Hospital, presented himself for treatment on March 30, 1943. Approximately two and one-half weeks pre-

†From the Department of Medicine, School of Medicine, Tulane University and Charity Hospital of Louisiana, New Orleans.

viously, March 13, 1943, he had examined a child who developed typical chickenpox the following day. Notes in this child's chart indicate that the disease ran the usual mild course. On March 29, the patient experienced malaise, low back pain, mild sore throat with moderate dysphagia, and a temperature of 100° F. There was no cough or chest pain. On March 30, he noticed several superficial vesicles about his feet and several pink macules and papules on his abdomen. He believed he was developing chickenpox, especially in view of his recent exposure and because he had never had varicella during his childhood.

Upon physical examination it was found that his temperature was 101°, pulse 112 per minute, respirations 24 per minute, and blood pressure 116/68. The patient was well developed and well nourished and did not appear acutely ill. A few faint pink macules were seen upon the neck, trunk, and arms, and there were about a dozen vesicles widely scattered over the neck, trunk, and flexor surfaces of both arms. There was one vesicle on the arch of the right foot which seemed to be deep seated and had a "shotty" feel.

Mild conjunctivitis and mild coryza were present. The pharynx was moderately injected and seemed to be dry. There was a slight grayish exudate over the whole posterior pharyngeal wall. There was no cervical or other lymph node enlargement. Examination of the chest, lungs, and heart revealed no abnormalities. Abdominal examination was entirely normal. The diagnosis at that time was probable varicella.

LABORATORY REPORTS

Blood Counts:

April 2—Hemoglobin 15.8 gm. per 100 c. c.; white blood cells 6,150; polymorphonuclear cells 69 per cent; lymphocytes 25 per cent; monocytes 3 per cent; eosinophiles 2 per cent; basophiles 1 per cent.

April 5—Red blood cells 5,480,000; hemoglobin 16.0 gm.; white blood cells 6,200; polymorphonuclears 77 per cent; lymphocytes 23 per cent.

Urine:

March 30—Albumin negative; sugar negative; microscopic negative.

April 4—Albumin slight trace; sugar negative; microscopic negative.

April 6—Albumin negative; sugar negative; microscopic negative.

Serology: April 2—Kline and Kolmer negative.

Sulfathiazole Blood Level: April 5—1.7 mgm. per 100 c. c.

Blood Culture: April 3—negative.

Sputum: April 3—negative for pneumococci.

Throat Culture: April 6—Negative for diphtheria; no increase in streptococci.

X-ray of Chest:

March 30—No evidence of pulmonary lesions; cardiac shadow normal (fig. 1).

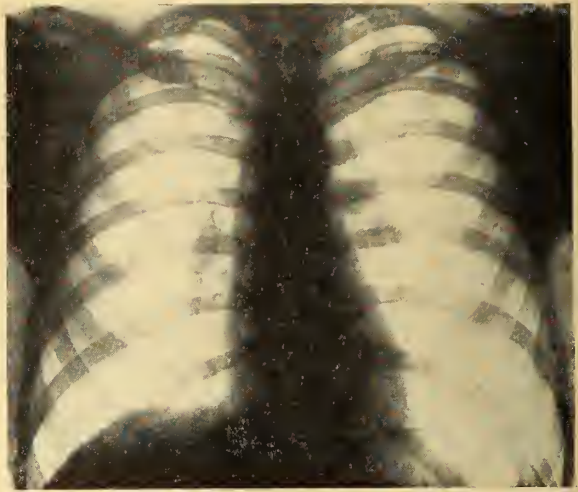


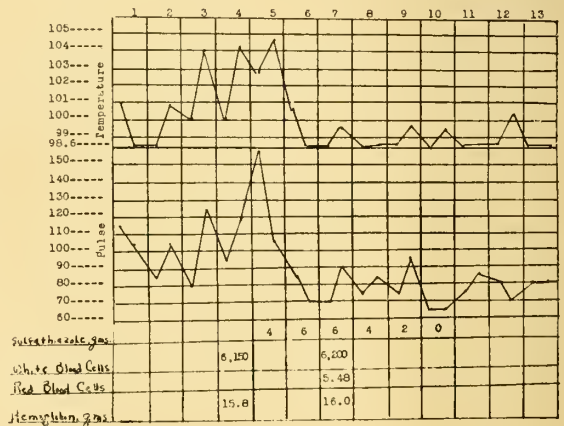
Fig. 1.

April 3—Portable film: Bronchopneumonic infiltration throughout both lung fields (fig. 2).

April 5—Marked clearing of the infiltration in both lung fields (fig. 3).

CLINICAL COURSE

The patient's temperature record is presented in chart 1. Two days after admission (April 1), the patient's rash became quite extensive and typical of varicella. Macules, papules, and vesicles were to be found in any one small area. There were only a few pustules to be found at this time. The



pustular stage never became very marked. Pruritis was severe and was relieved only temporarily by calamine lotion. Several vesicles were found upon the soft palate and posterior pharynx.

On April 3, the lesions appeared somewhat hemorrhagic. Dysphagia persisted and was unrelieved by warm saline and one-half strength hydrogen peroxide gargles. At 7:00 p. m. on this day the patient had a paroxysm in which he suddenly became cyanotic, unable to respire, and covered with perspiration. The patient stated he felt that

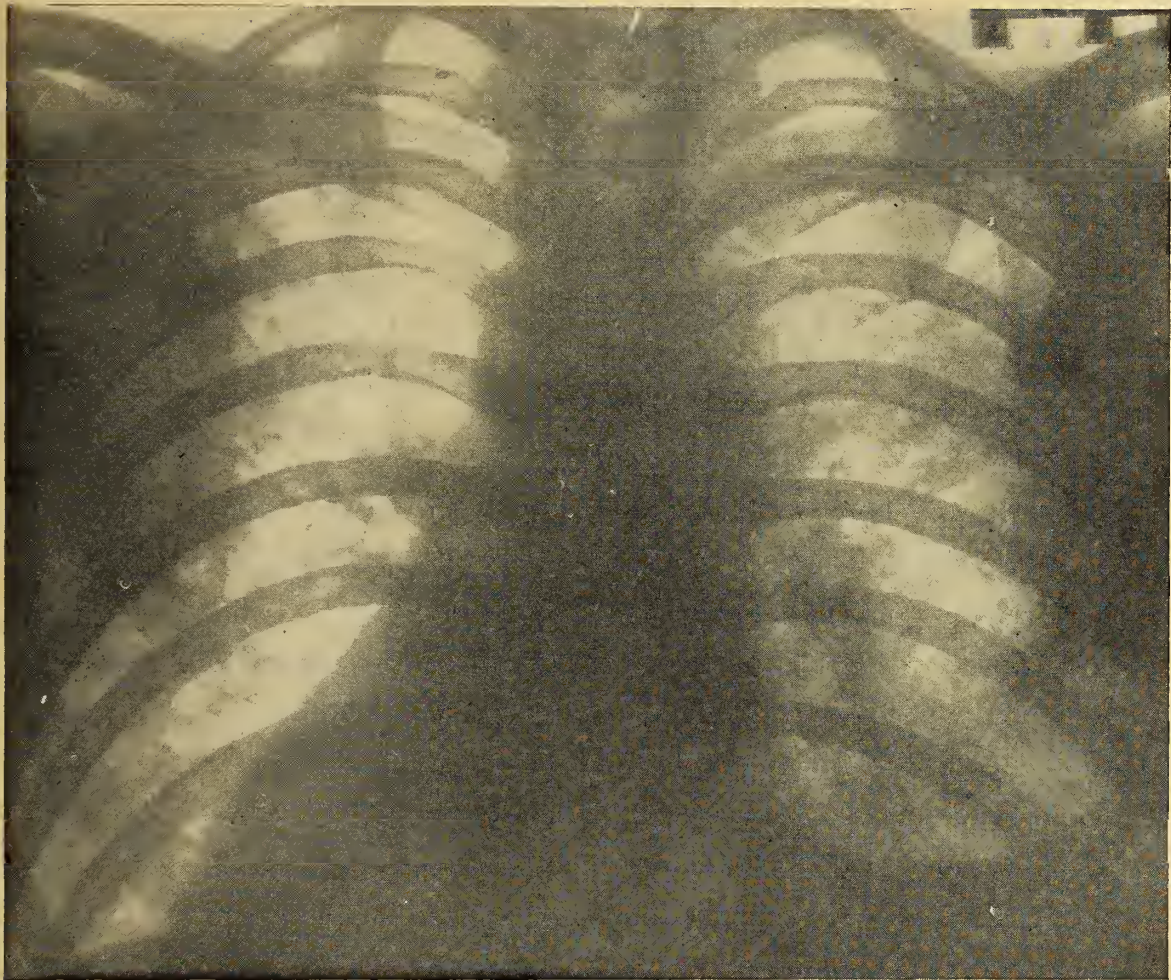


Fig. 2.

he would surely suffocate. The paroxysm lasted for only a few minutes and was interpreted as being a laryngeal spasm.

The following day the lesions were quite hemorrhagic and the patient experienced two paroxysms similar to the one already described. One of the paroxysms was immediately relieved by the subcutaneous injection of 0.3 c. c. of adrenalin chloride. Examination of the lungs on this day revealed a moderate number of crepitant rales at the right lung base posteriorly, with only slightly increased breath sounds and voice sounds in that area. The percussion note was unchanged. Respirations were only slightly increased in rate and shallow in depth. There was no cough or expectoration, but moderate pleuritic type pain on deep respiration. Roentgen examination of the chest revealed an extensive bilateral bronchopneumonic infiltration. Sulfathiazole therapy was started in the usual full dosage recommended for adults with pneumonia. From this time until discharge on April 12, improvement was rapid and continuous. Sulfathiazole therapy was discontinued on April 7,

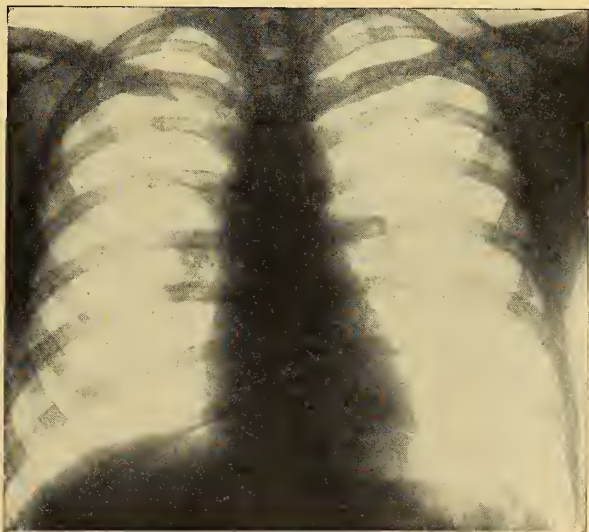


Fig. 3.

at which time only an occasional crepitant rale could be heard at the right lung base. There were no further paroxysms of laryngeal spasm, but mild pleuritic pain continued until 10 days after discharge. At the time of discharge, all of the crusts had dropped off, or had been picked off.

COMMENT

We have considered the possibility that this case may have been one of variola. However, the rash as described seems to us to have been typical of varicella.

We have reviewed the cases of chickenpox admitted to Charity Hospital from 1933 to 1943 for evidences of pneumonia. Our case is the only one which presented sufficient evidence for a diagnosis of pneumonia. This would appear to indicate the rarity of pneumonitis as a complication of chickenpox. However, routine roentgenograms of the chest are not taken at Charity Hospital on cases of varicella. In view of the sparsity of physical findings as compared to the extensive pulmonary involvement as seen on the chest roentgenogram, it does not seem unlikely that more frequent involvement of the lungs would be discovered by greater use of roentgenographic examination. The report of Ramsay and Scadding³ concerning "benign circumscribed pneumonitis" revealed the high incidence of clinically unsuspected pulmonary lesions which occur roentgenographically even in cases of simple upper respiratory infections.

Reimann, Havens, and Price¹ recently described the clinical manifestations of "virus" pneumonia as "characterized by a gradual onset with dry inflammation of parts or all of the mucosa of the respiratory tract; chills or chilliness; slowly rising fever lasting one to three weeks and falling by lysis; delayed signs of migratory pneumonia, often bilateral; relative bradycardia; unproductive cough; headache; photophobia; sweating, and a normal leukocyte count. Therapy with sulfonamide compounds has no influence on the course of the disease; complications are rare, and the mortality rate is practically nil." Our experience with the "virus" pneumonias conforms to the above description. We be-

lieve that the pneumonia in this case most probably had a virus as the etiologic agent, although by the methods at our disposal, we are unable to prove such a contention. The particular type of virus responsible probably was the virus of varicella. However, there is one aspect which most surely does not conform to the suggested cause of this patient's pneumonia and that is the apparent rapid response to sulfathiazole. Although the remainder of the patient's clinical picture strongly suggests a virus as the etiologic agent of his pneumonia, it is our belief that the apparent response to a sulfonamide is weighty evidence against such an etiologic agent. Stimson⁵ has said "no sulfonamide compound has yet been found which has any effect on infections caused by a filterable virus." The other etiologic agent which suggests itself from the work of Bullowa and Wishik² is the streptococcus. They found that pneumonia complicating varicella was nearly always due to the streptococcus and usually to *Streptococcus hemolyticus*. If our patient's pneumonia was due to *Streptococcus hemolyticus*, we should expect just such a response as was obtained to sulfathiazole therapy, but the other findings do not very strongly suggest such an etiologic agent, since there was no cough or expectoration, no leukocytosis, and a minimum of physical findings despite the widespread bilateral roentgenologic pulmonary involvement.

SUMMARY

(1) We have presented a case of severe varicella in an adult which was complicated by pneumonia and laryngeal spasm.

(2) The two most likely etiologic agents for the patient's pneumonia are discussed. In lieu of adequate proof for a specific agent we can only conclude that the pneumonia was "atypical."

(3) The apparent laryngeal spasms are believed to have been due to pox lesions occurring upon the mucous membrane of the larynx.

BIBLIOGRAPHY

1. Waring, J. J., Newbuerger, K., and Geever, E. F.: Severe forms of chickenpox in adults, Arch. Int. Med., 69:384, 1942.

2. Bullowa, J. G. M., and Wishik, S. N.: Complications of varicella, *Am. J. Dis. Child.*, 49:923, 1935.
3. Ramsay, H., and Scadding, J. G.: Benign bronchopulmonary inflammations associated with transient radiographic shadows, *Quart. J. M.*, (N. S.), 8:79-95, 1939.
4. Reimann, H. A., Havens, W. P., and Price, A. H.: Etiology of atypical pneumonias, *Arch. Int. Med.*, 70:513, 1942.
5. Stimson, P. M.: Some aspects of the common contagious diseases, *Bull. New York Acad. Med.*, 17:532, 1941.

CLINICO-PATHOLOGIC CONFERENCE*

AN INTERESTING CASE

W. H. GILLENTINE, M. D.†
and
BJARNE PEARSON, M. D.††
NEW ORLEANS

A. R., white male, aged 55, was admitted to Charity Hospital on June 14, 1943 and died on August 1, 1943.

Summary of History: Six months before admission a firm, non-tender mass appeared in the submental region, which slowly enlarged. Two months later he noticed a similar mass in the right submaxillary and left axillary regions. The submental mass was biopsied and he was given x-ray therapy, which was followed by temporary decrease in size of the masses. When they increased in size later, he was admitted to Charity Hospital. During the interval since onset, he had lost 20 pounds and had developed vague epigastric pain.

Summary of Physical Examination: Temperature 100°; blood pressure 100/65. The patient was a well developed, well nourished, white male, who did not appear acutely ill. Several firm, non-tender, movable masses were palpated in the anterior cervical region. In the submental region was a small midline scar, well healed, beneath which was a firm mass partially fixed to the surrounding tissues. A soft apical systolic murmur was heard. Small nodes were palpated in the inguinal region. In

the left axillary region was a mass 3 x 3 cm., resembling the cervical tumors.

Summary of Laboratory Findings on Admissions. Urine: specific gravity 1016; albumin 0; sugar 0; 2 to 4 white blood cells per high power field. Blood: hemoglobin 71 per cent; red blood cells 3,120,000; white blood cells 7,850; platelets 160,000; hematocrit 32:5; mean corpuscular volume 104; polys 70; eosinophils 2; basophils 1; monocytes 3; lymphocytes 24. Kline and Kolmer negative.

Summary of Courses in Hospital: X-ray of the chest revealed some slight enlargement of both hila, and small rounded areas of parenchymal infiltration suggestive of metastasis. He had a temperature elevation from 101° to 103°, going higher as a terminal event. He was given repeated 500 c.c. whole blood transfusions. He was given a course of sulfathiazole, then of sulfadiazine, without benefit. He received a total of 600 R filtered to each of two mid-abdominal parts. In spite of treatment he became more anemic, and developed dysphagia and dyspnea. Death occurred on August 1, 1943.

Dr. Gillentine: The essential findings in this case are enlarged, non-tender, slightly radiosensitive submental glands, tributary swelling of the submaxillary and cervical glands and a progressive macrocytic, hyperchromic anemia with a low platelet count and normal white count, vague epigastric pain, x-ray evidence of enlarged hila and small round areas of pulmonary infiltration, fever of 101-103° F. unaffected by sulfa drugs, net loss of twenty pounds, and death seven and one-half months after the first lymphatic enlargement.

While lymphatic enlargements were limited to the sub-mental groups and their tributaries, syphilis, carcinoma of the lower lip or tongue, plague, german measles, tularemia, infectious mononucleosis and other infections might have been considered. Time, a negative Wassermann, and the absence of local lesions disposed of these. Glandular tuberculosis need not be seriously considered in view of the chest films you see before you, and because of the rapidly

*Conference held at Charity Hospital on August 12, 1943.

†From the Department of Medicine, Tulane University School of Medicine.

††From the Department of Pathology, Tulane University School of Medicine.

progressive anemia and lack of necrosis in the lymphomas. The duration of the illness, the generalized lymphadenopathy and chest findings and the progressive anemia and normal white count limit our consideration to aleukemic leukemia, Hodgkin's disease and lymphosarcoma.

Aleukemic leukemia pathologically seems to be identical with leukemic leukemia. The majority of such cases reaching the stage of generalized enlargement of the lymphatic glands, replacement or infiltration of the bone marrow, anemia and fever of 101-103° F. will also show a leukemic blood count. The normal white count late in the disease is against this diagnosis.

Hodgkin's disease might cause the painless progressive lymphadenopathy, the dysphagia and epigastric symptoms by pressure from enlarged glands; the anemia and progressive cachexia and remittent fever. However, it occurs infrequently past 30 years of age, in 60 per cent of cases distends the spleen, the anemia is usually secondary, and in early cases is not accompanied by a decreased platelet count. Isolated nodules in the lung parenchyma suggests metastasis and/or invasion of a type rarely seen in Hodgkin's disease.

Lymphosarcoma is my diagnostic choice. The condition rarely spreads from a single node as suggested by the history, but it does spread regionally from lymph glands by invasion and infiltration as may be inferred from the chest plate and gastrointestinal symptoms. Discrete nodules in distant organs, for example the lungs, occur. One may consider with interest an explanation of the anemia. It is hyperchromic and macrocytic, if you will recall, and neither the picture of the intense stimulation of myelophthisis with anisocytosis, nucleated red cells and myelocytes or blasts, nor that of an aplastic anemia with lymphocytosis, even though the platelet count is low. One may postulate that infiltration and invasion of the stomach mucosa and duodenum has interrupted Castle's mechanism, in a similar fashion to carcinoma of the stomach, with the resulting pernicious change. Such invasive processes may infiltrate the submucosa

of the intestine and/or invade the wall. Dysfunction results from ulceration or stiffness of the area. The later progression of the anemia may have taken the myelophthisic or aplastic route. The absence of an enlarged spleen is in favor of this diagnosis, although fever is not common except late in the disease.

Question: Was fever present? *Answer:* Yes.

Dr. Pearson: Fever is an interesting phenomenon in these cases. It occurs fairly frequently. This has been pointed out by Baldrige in a large series of cases. We have been impressed here with fever especially in rapidly developing reticulum cell sarcoma. I recall one patient who was admitted with fever and cervical nodes which developed rapidly over a period of four weeks. At postmortem, marked abdominal dissemination in lymph nodes was present.

The main pathologic lesions, aside from peripheral lymph node involvement in this case, are those confined to the lungs, bronchial nodes, stomach, and perigastric lymph nodes. The spleen and the liver are of normal size and no nodules can be seen grossly. In the lungs there are several rounded white homogenous, flesh-like nodules present. The bronchial lymph nodes are enlarged and show the same appearance on cut section as those in the lungs. There is no evidence of any growth within the bronchi. The intervening lung tissue is well aereated and shows no sign of infection or abscess which is so common an accompaniment of bronchogenic carcinoma.

It is obvious in a case like this presenting lymphatic tumors and metastasis, and involvement of the stomach, that one is confronted with the task of differentiating grossly between Hodgkin's, lymphosarcoma, and leukemia. Especially with the lymphatic involvement of this magnitude and gross characteristic, one has to exclude particularly lymphatic leukemia, which in the face of the peripherical blood picture resolves itself to the aleukemic variety.

In Hodgkin's disease the lymph nodes are more or less matted together. In the spleen

and liver we would see not the rounded circumscribed involvement but a nodule whitish in appearance, the periphery of which fades somewhat imperceptibly into the surrounding tissue. This has been referred to as a "porphyry" spleen and liver and is a fairly characteristic of Hodgkin's involvement. The involvement of the stomach in Hodgkin's may be somewhat similar to the appearance presented in this case. As a rule they are not usually as distinct and rounded. For the same general reasons the pulmonary involvement is not that of Hodgkin's disease.

In lymphatic leukemia the spleen is large, sometimes extending to the brim of the pelvis. Cut section would show a salmon color due to the infiltration with cells of the lymphoid series. The liver would also be large and reveal infiltrations giving it a greyish cast. The lymph nodes would be similar in appearance, but metastatic lesions in the lung would not be present as this does not occur in lymphatic leukemia.

Gastrointestinal lesions, however, do occur in lymphatic leukemia, especially the aleukemic variety. Because of the fact that lymphatic leukemia is a less aggressive lesion than lymphosarcoma, the involvement seen is confined exclusively to the mucosa and submucosa so that the mucous membrane is thrown into huge folds reminiscent of the "convolutions of the brain." This was first brought out by Briquet and published in Cruveilhier's *Anatomy* in 1838. From 1938 to 1942 we studied twenty-eight cases of leukemia that came to necropsy from Charity Hospital and found among those, twenty instances of lymphatic leukemia. Of those, two had this particular type of gastrointestinal involvement.

Interestingly enough, involvement of the gastro-intestinal tract is frequent in lymphosarcoma occurring in about one-third of the cases. It is either present as nodular involvement similar to the case presented or as diffuse thickening of the wall. It becomes apparent that there probably is no fundamental difference between lymphosarcoma and lymphatic leukemia. This has been brought out rather clearly by Furth's recent experiments in mice. Our distinctions are then anatomic and rather arbitrary depending in part upon the degree of aggression and true metastasis exhibited in cases and infiltrative characteristics of lymphatic leukemia. As long as we are ignorant of the etiology, I think it still serves a useful purpose to differentiate the conditions on anatomic grounds.

Microscopically we see here a tumor composed of lymphoblasts and lymphocytes. The picture is singularly monotonous. In the stomach we see infiltrations of all the coats and destruction of the muscularis. In the lungs the same type of cells are present.

Question: Was the bone marrow examined?

Dr. Pearson: No sternal marrow was described in this case. This is an important point as the picture is quite characteristic.

Dr. Gillentine: The classification of the malignant lymphomas is of slight clinical interest because of the uniformly grave prognosis of the entire groups. Academically such clinico-pathological subdivisions may form the basis for the determination of a cause or mechanism. Such knowledge of etiology might make specific therapy possible.

NEW ORLEANS Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

C. C. deGravelles, M. D., Ex officio

For one year: Lucien A. LeDoux, M. D., Chairman

H. W. Kostmayer, M. D., Secretary

For two years: James K. Howles, M. D.

For three years: G. C. Anderson, M. D.,

Vice-Chairman

Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D.....*Editor-in-Chief*

Willard R. Wirth, M. D.....*Editor*

Daniel J. Murphy, M. D.....*Associate Editor*

COLLABORATORS—COUNCILORS

Edwin L. Zander, M. D.

J. T. O'Ferrall, M. D.

Guy R. Jones, M. D.

T. B. Tooke, Sr., M. D.

George Wright, M. D.

Rhett McMahon, M. D.

C. A. Martin, M. D.

W. F. Couvillion, M. D.

Paul T. Talbot, M. D.....*General Manager*
1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

SEASON'S GREETINGS

The New Orleans Medical and Surgical Journal wishes to extend to its readers best wishes for a Christmas Season which, due to the circumstances of war, cannot be that happy period which was enjoyed before 1941. We hope, when our country has killed off the wild boars of Europe and the yellow pigs of Asia, that we will be able to return to a state of peace, happiness and security. It is the earnest hope of the Journal that this time next year there will have been returned to us our sons and our daughters;

our medical friends will no longer be in uniform but will have come back to their families, and again will be practicing their profession. Perhaps it is too much to hope that the war will be over before next Christmas but at least we can have the ardent wish that this may be true.

THE SCIENCE OF HEALTH

Under this nomenclature Meredith discusses the health of people in general. He points out that about 10 per cent of the population may be considered as being sick; one-half of these seriously ill. Ten per cent of the population may be classified as "well" while the large intermediate group at the best can only be considered as being "semi-well."

Stated somewhat differently, Ryerson would classify this intermediate group of 90 per cent as follows: 30 per cent of these individuals have loss of health; 30 per cent have poor health; 20 per cent have average health. In other words, approximately only 30 per cent of the people in the country may be said to enjoy average to excellent health. These figures are confirmed in part by the examination of the draftees of this country, approximately 50 per cent of the first two million registrants who were examined, according to the earlier figures released, were found unqualified for general military service. However, 10 per cent of these were disqualified for lack of educational qualifications. The experiences in the Canadian Army reflect those of the United States. Only fifty-six per cent of the Canadian recruits were found suitable for any type of military warfare. Twenty per cent of them were totally unfit and the remaining 25 per cent were considered to have sufficient physical stamina to serve in Canada or behind the lines.

The large number of men who physically and psychically are deemed unable to cope with the exigencies of military life should make American people pause and think. Physicians should be stimulated to greater efforts in the field of personal preventive medicine in order to build up and strengthen the large group of people who are consid-

ered as "semi-well" and who have poor health, to a bodily state in which they should be able to lead a healthy and happy existence. It should put our profession on the alert. These figures dealing with the health of a large segment of the population indicate, and should make the physician realize, that in the field of preventive as well as curative medicine there are large areas which have as yet been untouched.

DRAFT REJECTION

There exists at the present time a considerable difference of opinion regarding the men accepted for the draft, between those working on the draft boards and the doctors who are in active service. The latter point out that men are being sent to combat forces who are not physically qualified to carry on the duties of a soldier, that many of these men are so grossly and obviously unfit that it is impossible to imagine that they were accepted without more than a most cursory superficial examination. On the other hand, the civilian doctors and the doctors who are working in induction centers feel that many of the questionable patients who they finally pass could carry on as excellent soldier material. Take the question of a man who has a heart murmur which the cardiologist at the induction center after a complete cardiologic survey of the individual including an electrocardiogram and x-ray of the chest decides that this murmur is purely functional and that the inductee does not have an organic heart disease. This man appears at camp, the first time he responds to a sick call the murmur is picked up and he is hospitalized. There he may stay for a period of time and again return to duty. This may be repeated, because as soon as the heart murmur is heard, irrespective of the time and occurrence of that murmur in the heart cycle or where it is best heard, it is deemed to be organic and the same series of events are repeated. Ultimately the man will have little training and in all possibility may become a cardiac neurotic so that he is not fit for military service.

The draft boards are criticized because they send men to the induction center who have all kinds and types of physical disabilities but here again many of these disabilities are largely matters of opinion. A man who is able to do hard manual labor in civilian life despite some physical abnormality is certainly going to be able to do the same thing in Army life. These men in all probability would make good soldiers and would give satisfactory service but because they have an abnormal condition they are returned to civil life.

It is to be regretted that there is not a closer liason between the induction centers and the men who made the physical examination at these centers with the Army physicians who may bring a man up before a disability board for discharge from the service. It is an oft repeated statement that we are scraping the bottom of the barrel now for our manpower. The induction center physicians are certainly making every effort to send into the Army men whom they deem qualified for the physical efforts that a soldier's life requires. Company commanders want only the superlative and the very best men physically in their organization. They can often bully their battalion surgeon, if a man is not 100 per cent perfect, into getting the poor soldier out of their unit into a hospital where he ultimately may be discharged and returned to civil life. It is estimated that more than 900,000 soldiers will be sent out of the Army on a surgeon's disability certificate and yet undoubtedly the great majority of these men will have to make a living for themselves not by mental effort but by physical strain. They have done it in the past and they will have to do it in the future. They should be continued in the Army possibly on a limited status duty, certainly doing the type of work they would do in everyday life or as closely approximating it as possible. It is only by cooperation between the various groups that have the say as to a man's physical ability that we will have sufficient manpower to win the war.

ORGANIZATION SECTION

The Executive Committee dedicates this page to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

OBSTETRIC AND PEDIATRIC SERVICE FOR WIVES AND CHILDREN OF ENLISTED MEN

In our November issue we called your attention to the fact that the Executive Committee was very busy with a plan for the care of maternity cases and children of enlisted men. A former plan had been proposed by the Children's Bureau of the Federal Government which was not satisfactory to the House of Delegates and to the Executive Committee.

On October 1 the Executive Committee met in special session in New Orleans to consider the recommendations of the special committee concerning this problem. The Executive Committee voted to accept the plan as submitted in principle under protest, and they asked the special committee to prepare appropriate objections to the plan which would be attached to the revised plan as a part of the agreement. The Executive Committee was able to get \$50.00 for obstetrical care including prenatal and postnatal and delivery, \$50.00 for obstetrical surgical consultants, increase to \$20.00 for minor surgery performed, and the understanding that this program would only be participated in by physicians qualified by our Louisiana State Board of Medical Examiners to practice obstetrics. So the plan was agreed upon as a war measure and only for the duration.

Following this article you will find a copy of the report of the special committee. The final plans of operation for the execution of the plan are now waiting final approval of the Children's Bureau in Washington. We have every reason to believe that this will be acceptable to the Federal Government. While it can be understood from the above explanation that the plan for this service was not acceptable to the Executive Committee for various reasons, it was the best that could be secured without provoking

criticism in the failure of organized medicine of Louisiana to render such service to the boys in uniform. Very shortly you will be properly informed by the state board of health, parish societies, etc., exactly the agreements that have been determined for the administration of this service. It is presumed that all the doctors of the state will cooperate in rendering this needed medical service to the wives and children of the members of the armed forces.

November 6, 1943.

Executive Committee,
Louisiana State Medical Society,
1430 Tulane Avenue,
New Orleans, La.

Dear Sirs:

It appears, according to recent interpretation, that the resolution adopted at the last meeting of the Executive Committee with reference to the plan offered by the Louisiana State Department of Health pertaining to the Obstetric and Pediatric care of the wives and infants of men in the service, makes it mandatory for this Committee to accept this plan. This special Committee very reluctantly carries out this mandate, and accepts the plan under protest.

This plan herewith attached has been reviewed and amended, making such changes as:

- (a) approving for participation in the plan only those physicians who are graduates of a medical school approved by the Council on Medical Education of the American Medical Association, and are licensed to practice medicine by the Louisiana State Board of Medical Examiners;
- (b) increasing the obstetric fee, the consulting obstetrical surgical fee, and the pediatric fees.

The Committee looks upon the plan as being very dangerous with reference to the

future of medicine, and protests its acceptance for the following reasons:

1. Even though it is claimed to be an emergency measure for the present war emergency and six months thereafter, it is another entering wedge of great magnitude, to the socialization of medicine.

2. Agreeing with the expressions of the Michigan State Medical Society we believe "the opposition is based on the belief that this will encourage the development of a poor quality of obstetric and pediatric care, establish a precedent for further extension of governmental interest into the private practice of medicine, commit to such governmental activities those members of the medical profession who are in the military service, and who have not had an opportunity to express their opinions, and open the door to governmental medical service for all, without economic distinction or determination of need, and establish a fee schedule."

3. The physicians who participate in this plan will be obliged to accept certain fixed fees. The establishment of a mandatory fee table under primary control of a non-medical bureau is a menace to the quality of present and future medical service.

4. The House of Delegates of the American Medical Association (1943) did not approve the plan, and their action remains unchanged up to date. Both the House of Delegates of the American Medical Association, and the first report of this special committee to the Executive Committee, recommends an alternate plan, namely, making an allotment to the woman involved, thus permitting her to make her own arrangements with the physician of her choice. Despite

the fact these soldiers' wives are given allotments for various other purposes, the government has turned this plan down with reference to the obstetric and pediatric care of the same women.

5. The Committee is informed by the American Medical Association that "insofar as our efforts can reveal, there has never been any legislative act passed by the Congress authorizing the initiation of the plan."

6. The physicians in Washington who are employed by the Department of Labor and the Children's Bureau to initiate and operate the plan are apparently committed to the socialization of medicine. At least one of their representatives, interviewed in this state, gives every indication that he favors such regimentation of the medical profession. When questioned with reference to his belief in the socialization of medicine he evaded the issue by stating "he did not know what was meant by socialization of medicine." Such an answer clearly indicates his belief, and what he will do when the emergency is supposed to terminate.

For these, and many other reasons, the Committee accepts the plan, as hereto attached under protest in compliance with the mandate from the Executive Committee of the Louisiana State Medical Society.

Very truly yours,

John T. O'Ferrall, M. D.,
Chairman, Special Committee

APPROVED:

Dr. C. C. deGravelles, President,
Louisiana State Medical Society.

P. S.—This report to be permanently attached to the plan.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

December 1. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Mercy Hospital Staff, 8 p. m.

December 2. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
Executive Committee, Baptist Hospital, 8 p. m.

December 6. Board of Directors, Orleans Parish Medical Society, 8 p. m.

December 7. Eye, Ear, Nose and Throat Staff, 8 p. m.

December 8. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.

Touro Infirmary Staff, 8 p. m.
 Women's Auxiliary, Orleans Parish
 Medical Society, Orleans Club,
 3 p. m.

December 13. Scientific Meeting, Orleans Parish
 Medical Society, 8 p. m.

December 15. Clinico-pathologic Conference, Char-
 ity Hospital Morgue Amphitheater, 1:30 p. m.
 Charity Hospital Surgical Staff,
 8 p. m.

December 16. Clinico-pathologic Conference, Touro
 Infirmary, 11:15 a. m. to 12:15
 p. m.

Chaillé Memorial Oration, Hutchin-
 son Memorial Auditorium, 8 p. m.

December 17. I. C. R. R. Hospital Staff, 12:30
 p. m.

December 20. Hotel Dieu Staff, 8 p. m.
 Clinico-pathologic Conference, Bap-
 tist Hospital, 8 p. m.

December 21. Charity Hospital Medical Staff, 8
 p. m.

December 22. Clinico-pathologic Conference, Char-
 ity Hospital Morgue Amphitheater, 1:30 p. m.

Clinico-pathologic Conference, Ma-
 rine Hospital, 7:30 p. m.

French Hospital Staff, 8 p. m.

December 23. Clinico-pathologic Conference, Touro
 Infirmary, 11:15 a. m. to 12:15
 p. m.

December 28. Baptist Hospital Staff, 8 p. m.

December 29. Clinico-pathologic Conference, Char-
 ity Hospital Morgue Amphitheater, 1:30 p. m.

New Orleans Hospital Dispensary
 for Women and Children Staff,
 8 p. m.

December 30. Clinico-pathologic Conference, Touro
 Infirmary, 11:15 a. m. to 12:15
 p. m.

During the month of November the Society held
 one regular scientific meeting. The program was
 as follows:

Penicillin—By Dr. Morris Schaefer, Ph. D., De-
 partment Pathology and Bacteriology, Tulane Uni-
 versity. Drs. Howard Mahorner and Wm. Gillen-
 tine opened the discussion to this paper.

Rabies in New Orleans—By Drs. Emil E. Palik
 and Emma S. Moss. Drs. George McCoy and John
 M. Whitney opened the discussion to this paper.

NEWS ITEMS

Dr. B. I. Burns attended the annual meeting of
 the Association of American Medical Colleges held
 in Cleveland, October 25-27. Dr. Burns also rep-
 resented the Louisiana State University at the

Centennial Celebration of Western Reserve Univer-
 sity in Cleveland, October 28.

Dr. T. J. Dimitry addressed the Forth Worth
 Eye, Ear, Nose and Throat Society on the recent
 advances in ophthalmology at a meeting of the
 Society, October 15. Dr. Dimitry also addressed
 the Thirteenth Annual Fall Clinical Conference of
 the Oklahoma Clinical Society in Oklahoma City,
 October 21.

Dr. H. W. Kostmayer and Dr. John H. Musser
 attended the meeting of the Association of Ameri-
 can Medical Colleges in Cleveland, October 25-27.
 Drs. Kostmayer and Musser also attended the Cen-
 tennial Celebration of Western Reserve University
 in Cleveland, October 28.

Dr. Clarence Steele presented a paper on Tin-
 nitus Aurium, and Dr. Findley presented a paper
 on Syncope at the October meeting of the Ochsner
 Clinic Staff.

Drs. George Burch, Alton Ochsner and Ralph
 Platou recently attended a meeting of the South-
 west division of the Alabama State Medical Society
 in Camden. Dr. Burch spoke on the treatment of
 congestive heart failure; Dr. Ochsner spoke on the
 surgical significance of amebiasis, and Dr. Platou
 spoke on hemolytic disease of the newborn.

Dr. Rena Crawford spoke on the importance of
 immunization of children at a meeting of the New
 Orleans Business and Professional Women's Club
 in New Orleans, October 13.

Dr. Edgar Hull was recently elected president
 of the general visiting staff of Charity hospital.
 Dr. W. D. Beachman was elected secretary-treas-
 urer. The following physicians were elected to the
 medical advisory committee: Drs. Gilbert C. An-
 derson, Frank Chetta, Adolph Jacobs and C. Gor-
 don Johnson.

Dr. Neal Owens recently attended a meeting of
 the American Society of Plastic and Reconstructive
 Surgery in New York. Dr. Owens also attended
 a meeting of the Association of Military Surgeons
 of the United States in Philadelphia, October 21.

Dr. W. A. Sodeman and Dr. Ralph Herren re-
 cently attended a meeting of the American Public
 Health Association in New York.

Dr. Carl Wilensky attended a meeting of the
 Academy of Ophthalmology and Otolaryngology
 in Chicago, October 10-13. While in Chicago Dr.
 Wilensky visited several of the eye clinics.

Dr. Maud Loeber addressed members of the Diocesan Council of Catholic Women at their annual convention held October 24 at Madonna Manor. Dr. Loeber is honorary president of the D. C. C. W. and a member of the board of the National Council of Catholic Women.

At the October staff meeting of the Mercy hospital Dr. Chris Bellone spoke on Utero-Sacral Ligament Shortening and Prolapse.

Comdr. W. Roger Brewster was recently appointed chief of the surgery department of the Naval Hospital in Brooklyn.

Lt. Col. Chester Fresh has been made a surgeon at Mitchell Field.

Lt. Col. C. E. Gorman was in New Orleans recently for a conference with officials of the induction stations and selective service officials on physical standards of the army.

Lt. Charles R. Hume's new address is Acorn 21, Navy Fleet Post Office, San Francisco, Calif.

Capt. Maurice Lescale was in town recently; he was in attendance at the scientific meeting of the Society.

Capt. V. P. Blandino writes—Received your letter of June 3, asking for the enclosed information. See, your letter made quite a trip trying to find me. I have been in North Africa since May 11, 1943. Our hospital was set up about three months ago, and we are kept quite busy and have many casualties. We have handled about 2,500 cases without a fatality. The work is interesting, but this is a God forsaken and lonely place. Recently the Tulane and L. S. U. units arrived here, and I believe will soon be in operation. Keep the home fires burning, and regards to you all.

The following physicians were recently promoted: Wilfred Finkelstein from first lieutenant to captain; Abe Golden from first lieutenant to captain; Isaac W. Kaplan from first lieutenant to captain; Harry Meyer from captain to major; Joseph Stamm from captain to major; J. Arthur White, Jr., from first lieutenant to captain; Richard L. Buck from first lieutenant to captain; and Carl N. Wahl from captain to major.

Comdr. David R. Womack's new address is, USN Amphibious Training Base, Fort Pierce, Fla.

Dr. Elizabeth Bass recently addressed the New Orleans branch of the American Association of University Women at a luncheon meeting.

Drs. Alton Ochsner, Francis E. LeJeune and Manuel Garcia attended the first Mexican congress on cancer at Guadalajara, Mexico, October 24-30. Dr. Ochsner spoke on bronchiogenic carcinoma; Dr. LeJeune spoke on carcinoma of the larynx; and Dr. Garcia spoke on carcinoma of the cervix.

Dr. Isidore Cohn was recently elected president of the Louisiana State University Alumni Federation.

Dr. Henry W. E. Walther recently attended a meeting of the International Medical Assembly of the Inter-State Post Graduate Medical Association of North America in Chicago. While in Chicago Dr. Walther visited the Urological Clinic of Dr. Charles Huggins in Billings Hospital and the Urological Clinic of Dr. Harry Culver at Cook County Hospital.

Dr. Waldemar R. Metz recently attended a meeting of the American Society of Plastic and Reconstructive Surgery in New York, and also visited various plastic surgery clinics in the East.

Daniel J. Murphy, M. D., Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

JACKSON-LINCOLN-UNION PARISH MEDICAL SOCIETY NEWS

At a meeting of the Jackson-Lincoln-Union Parish Medical Society held in Ruston, November 16, 1943, the following officers were elected to serve for 1944 as follows: President: Dr. T. A. Dekle, Jonesboro; Vice-President from Lincoln Parish: Dr. J. M. Johnson, Ruston; Vice-President from Union Parish: Dr. J. F. Tanner, Bernice; Secretary-Treasurer: Dr. J. J. Bennett, Ruston; Delegates: Dr. J. B. Harris, Ruston; Alternate: Dr. T. A. Dekle.

AMERICAN MEDICAL ASSOCIATION COUNCIL OF MEDICAL SERVICE AND PUBLIC RELATIONS

The Council has authorized the publication of the following statement.

A STATEMENT OF GENERAL POLICIES

Pursuant to carrying out the duties imposed on it by the House of Delegates, the Council has adopted the following general policies:

1. The Council on Medical Service and Public Relations recognizes the desirability of widespread distribution of the benefits of medical science; it encourages evolution in the methods of administering medical care, subject to the basic principles necessary to the maintenance of scientific standards and the quality of the service rendered.

It is not in the public interest that the removal of economic barriers to medical science should be utilized as a subterfuge to overturn the whole order of medical practice. Removal of economic barriers should be an object in itself.

It is in the public interest that the standards of medical education be constantly raised, that medical research be constantly increased and that graduate and postgraduate medical education be energetically developed. Curative medicine, preventive medicine, public health medicine, research medicine, and medical education, all are indispensable factors in promoting the health, comfort and happiness of the nation.

2. The Council through its executive committee and secretary shall analyze proposed legislation affecting medical service. Its officers are instructed to provide advice to the various state medical organizations as well as to the legislative committees concerning the effects of the proposed legislation. It shall likewise be the duty of its officers to offer constructive suggestions to bureaus and legislative committees on the subject of medical service.

3. The Council approves the principles of voluntary hospital insurance programs but disapproves the inclusion of medical services in those contracts for the reasons adopted by the House of Delegates at the 1943 meeting.

4. The Council approves voluntary prepayment medical service under the control of state and county medical societies in accordance with the principles adopted by the House of Delegates in 1938. The medical profession has always been very much opposed to compulsory health insurance because (1) it does not reach the unemployed class, (2) it results in a bureaucratic control of medicine, and interposes a third party between the physician and the patient, (3) it results in mass medicine which is neither art nor science, (4) it is inordinately expensive, and (5) regulations, red tape and interference render good medical care impossible. Propaganda to the contrary notwithstanding, organized medicine in general, and the American Medical Association in particular have never opposed group medicine, prepayment or non-prepayment, as such. The American Medical Association and the medical profession as a whole have opposed any scheme which on the face of it renders good medical care impossible. That group medicine has not been opposed as such is evidenced by the fact that there are many groups operating in the United States which have the approval of the medical profession, and members of these groups are and have been officials in the national and state medical organizations. That group medicine is the Utopia for the whole population, however, is not probable. It may be and possibly is the answer for certain communities and certain industrial groups if the medical groups are so organized and operated as to deliver good medical care.

5. The Council believes that many emergency measures now in force should cease following the end of hostilities.

6. The Council believes that the medical profession should attempt to establish the most cordial relationship possible with allied professions.

7. There is no official affiliation between the American Medical Association and the National Physicians Committee. However, since it is the purpose of the National Physicians Committee to enlighten the public concerning contributions which American medicine has made and is making in behalf of the individual and the nation as a whole, it is the opinion of the Council that the medical profession may well support the activities of the National Physicians Committee and other organizations of like aims.

8. American medicine and this Council owe a responsibility to our colleagues who are making personal sacrifices to answer the call of the armed forces. Therefore, the Council expresses the desire to cooperate with the medical committee on post-war planning in order to assist our colleagues in reestablishing themselves in the practice of medicine, and in the preservation of the American system of medicine.

REFRESHER COURSE IN OBSTETRICS

The following letter has been sent to the doctors of Louisiana. This refresher course should be of great value to members of the medical profession of the state who are interested in the practice of obstetrics.

Plans have been made to continue to offer to physicians of the State an intensive refresher course in obstetrics at the Louisiana State University Medical Center. The course will extend over a period of two weeks and will be offered twice during the fiscal year, 1943-44, as follows:

December 13, through December 24, 1943,

May 1, through May 13, 1944.

The courses are being financed from Social Security funds allocated to the State by the Children's Bureau, U. S. Department of Labor. These funds are administered by the Section of Maternal and Child Health Service of the Louisiana State Department of Health.

Each physician, while in attendance at the course, will be allowed a per diem of \$4.00.

Applications will be reviewed by a committee from the State Medical Society who will assist the Department of Health in selecting the physicians to be awarded the courses. A small group of physicians will be accepted for each course so that each physician may receive individual attention.

If you are interested in taking the course please return the enclosed application not later than November 20, 1943. Please list the dates in order of preference and convenience to you.

David E. Brown, M. D.,
State Health Officer.

THE LOUISIANA CHAPTER OF THE NATIONAL GASTROENTEROLOGICAL ASSOCIATION

The Louisiana Chapter of the National Gastroenterological Association held its annual meeting October 28 at supper, at Arnaud's Restaurant, and the following officers were elected for the coming year.

President: Dr. Percy L. Querens; Vice-President: Dr. Jules M. Davidson; Secretary-Treasurer: Dr. Gordon McHardy; Members of the Board: Drs. Donovan Browne, Herbert Weinberger, and Geo. T. Fasting.

STARS AND BARS CHAPTER OF ALPHA OMEGA ALPHA

The Stars and Bars chapter of the honorary medical society, Alpha Omega Alpha, announced the election of the following Senior students at Tulane University Medical School: Maridel Saunders, Nathan C. Lafleur, Jerome B. Katz, Jacob Faust, Madison J. Lee, George T. Schneider, Leonard K. Knapp, John Laurens, Charles J. Burn-

ham, Robert B. Ellis, Rafael Nieto-Gomez, Longstreet C. Hamilton and Hugh Lee Boyd.

The formal exercises with the presentation of the key will be held the middle of December. At this time an address will be given by Dr. J. H. Musser and will be followed by a short business meeting. A banquet will be held following the business meeting, to which all members of the Tulane Medical School are invited to subscribe.

SOUTHERN BAPTIST HOSPITAL

New Orleans

The regular clinical staff meeting was held on November 23, 1943, at 8 p. m. The program included a case report on rabies by Dr. Roy de la Houssaye. Dr. W. H. Gillentine presented the report of the "Death Committee."

THE SOUTHERN MEDICAL ASSOCIATION

The annual meeting of the Southern Medical Association was held in Cincinnati October 16-18. There was a large attendance, over 2000 registrants being at the meeting. On the program from Louisiana were the following physicians, with the titles of their presentations: Drs. George E. Burch and Travis Winsor—The Phlebomanometer; Dr. John S. LaDue—Studies on the Mechanism of Compensation of the Failing Heart with Special Reference to Lanatoside C.; Drs. Charles B. Odom and Michale C. Kolczun (Lorain, Ohio)—Use of Procaine in Almond Oil in Various Pains; Dr. W. A. Sodeman and R. L. Pullen—Bagasse Disease of the Lungs; Drs. H. T. Engelhardt and V. J. Derbes—Allergy to Liver Extract; Dr. Edgar Burns—An Evaluation of Urinary Antiseptics; Drs. W. A. Sodeman and E. L. King—Heart Disease in Pregnancy: Prognostic Aspects; Dr. Wiley R. Buffington—Diseases of the Macula: Familial, Degenerative and Traumatic; Dr. Lucien A. Le Doux—The Management of the Menopause from the Gynecological Point of View; Dr. Harry Senekjic—Leptospirosis in New Orleans.

SOUTHERN SURGICAL ASSOCIATION

The annual meeting of the Southern Surgical Association will be held at the Roosevelt Hotel, New Orleans, December 7-9. An excellent program of some forty presentations has been prepared by the president, Dr. Barney Brooks of Nashville, and the secretary, Dr. Alton Ochsner of New Orleans. Louisiana men who will appear on the program include: Dr. Edgar Burns, who will speak on Diverticula of the Urinary Bladder; Dr. Guy A. Caldwell, whose subject will be Diagnosis and Treatment of Spondylolithesis; Major Dr. Michael DeBakey—Current Trends in Military Surgery; Dr. Isidore Cohn—Carcinoma of the Duodenum; Dr. Joseph A. Danna—Some Inter-

esting Experiences with Ether Anesthesia; Lt. Col. Mims Gage—The Simplicity of the Matas Endo-Aneurysmorrhaphy; Dr. Howard Mahorner—Control of Pain in Posttraumatic and Other Vascular Disturbances, and Dr. Rudolph Matas—Personal Experiences in the Surgical Treatment of Aneurysms of the Lower Extremities; Lantern Slide Exhibit with Special Reference to the Methods of Intrascapular Suture (Endo-Aneurysmorrhaphy).

Other distinguished speakers will include Dr. F. A. Collier of Ann Arbor, Michigan; Dr. Gordon Heyd, of New York City, past-president of the American Medical Association; Dr. Frank Lahey of Boston, likewise a past-president of the Association; Dr. Paul B. Magnuson of Chicago; Dr. John J. Morton of Rochester, N. Y., and Colonel Bradley L. Coley of New York City.

LOUISIANA STATE UNIVERSITY MEDICAL SCHOOL

The Louisiana State University Society of Medical Sciences conducted a round-table discussion on Medical Ethics Monday night, November 15, 1943, at the Louisiana State University Medical Center before a large audience of members of the Society and guests. The purpose of the discussion was to portray a picture of the practical problems in ethical relationships encountered by the practitioner. In order to make a picture as complete as possible the participants in the discussion, Dr. Edgar Hull, Dr. Isidore Cohn, and Dr. E. L. Zander, Faculty members, represented respectively the specialties of medicine, surgery, and obstetrics-gynecology. Herbert Derman, Senior medical student, who is President of the Society, acted as moderator.

Some of the pertinent points of discussion concerned such important questions as fee-splitting, professional secrecy, abortion, the position of the Catholic doctor on contraception, the extent and abuses of professional courtesy, obligations of the physician, advertising, euthanasia, and establishment of fees.

At the business session, ballots were cast with Dr. Hull, the Faculty Adviser, for the election of the Outstanding Fellow of the Society who will receive the Hull Award at the annual banquet, November 29, 1943.

Dr. B. I. Burns, Dean of the Louisiana State University School of Medicine, announces the annual ceremony of Presentation of Keys to the newly elected members of The Circle, honorary scholastic society of the medical school. The ceremony took place in the auditorium of Charity Hospital at New Orleans, at 4:00 p. m., on November 9, 1943.

Dr. Richard Ashman, Director of the Department of Physiology, presented the keys to the following new members: Miss Evelyn Katz, Alfredo

Perez, Ellis Mischle, Sydney Lewis, and John Signorelli of the Senior Class, and James Decuers, Miss Ann Sostanza, and Elliott Roy of the Junior class. Present Senior Class members of The Circle who received the award last year as Junior students include Leon Pordy, Joseph Edelman, and Shea Halle.

Dr. Edgar Hull, Director of the Department of Medicine, introduced the guest speaker, Dr. Chester A. Stewart, Director of the Department of Pediatrics and newly chosen honorary member for the year. Dr. Stewart's address, entitled *Medicine Marches On*, proved to be a most informative discussion of modern trends in medicine.

Key presentations were followed in the evening by a banquet in honor of Dr. James D. Rives, Clinical Professor of Surgery and retiring Chairman of the Faculty Advisory Committee of the Society. Leon Pordy, President of The Circle, presided at the dinner. Following an introduction by Dr. Urban Maes, Director of the Department of Surgery, Dr. Rives delivered the speech of the evening, the high note of an exceedingly interesting session.

Dr. B. I. Burns, Dean of the Louisiana State University School of Medicine, announced that Dr. John S. LaDue, Instructor in Medicine in the Department of Medicine, presented an exhibit at the meeting of the Southern Medical Association in Cincinnati, November 16-19. The subject of his exhibit is *Studies on the Mechanism of Compensation of the Failing Heart with Special Reference to Lanatoside C*. Other members of the Faculty who attended the Southern Medical Association meeting are Dr. Robert Lowe, Assistant Professor of Medicine, Dr. George Taquino, Director of the Department of Otolaryngology, and Dr. Spencer McNair, Clinical Assistant Professor of Otolaryngology.

Meeting in Cincinnati at the same time as the Southern Medical Association was the American Academy of Pediatrics, November 15-18, and the American College of Chest Physicians, November 16-18, both of which meetings were attended by Dr. Charles A. Stewart, Director of the Department of Pediatrics. At the American College of Chest Physicians, Dr. Stewart read a paper on *Tuberculosis in Children and Young Adults*.

Dr. Marion Hood, Assistant Professor of Parasitology, went to Cincinnati to attend the annual meeting of the American Society of Tropical Medicine.

DIRECTORY OF MEDICAL SPECIALISTS

Announcement is made that the Directory of Medical Specialists is now to be published by the A. N. Marquis Company of Chicago, publishers of "Who's Who in America." Previous editions

have been published for the Advisory Board for Medical Specialties by the Columbia University Press of New York City.

It is planned not to issue the next edition before 1945, on account of the war, but the A. N. Marquis Company will publish a supplemental list of all those who have been certified by the American Boards since the last (1942) edition of the Directory, totaling about 3600. This is to be distributed at cost, and monthly or bimonthly bulletins listing successful candidates for certification at examinations during the additional interim before the next edition, are to be issued as a subscribers' service.

Dr. Paul Titus (Pittsburgh) of the American Board of Obstetrics and Gynecology will continue as the Directing Editor, and Dr. J. Stewart Rodman (Philadelphia) of the American Board of Surgery continues as Associate Editor. The Editorial Board will be composed, as before, of the Secretaries of the fifteen American Boards.

Communications should be addressed to the Directing Editor, Directory of Medical Specialists, 919 No. Michigan Avenue, Chicago (11), Illinois.

THE SIXTH ANNUAL FORUM ON ALLERGY

The sixth annual forum on allergy will be held in the Statler Hotel, St. Louis, Missouri, on Saturday and Sunday, January 22-23, 1944. This is a meeting to which all reputable physicians are most welcome, and where they are offered an opportunity to bring themselves up to date in this rapidly advancing branch of medicine by two days of intensive post-graduate instruction. For instance, the fifteen study groups, any three of which are open to him, are so divided that those dealing with ophthalmology, and otolaryngology, pediatrics, internal medicine, dermatology and allergy run consecutively. In addition the study groups are arranged on the basis of previous registration. In this way, as soon as the registrations are completed, the registrant is expected to write the group leader and tell him what questions he wants brought up in the discussion. Attention is also called to the fact that during these last two days almost every type of instructional method is employed. Special lectures by outstanding authorities, study groups, pictures, demonstrations, symposia and panel discussions.

Although the program is most intense, informality and an emphasis on the practical marks the conduct of the whole meeting. Good fellowship at luncheon, dinner and smoker reigns throughout the two days. The meeting offers an exceptionally fine opportunity to meet and to come to know many distinguished authorities in this rapidly advancing but new field of medicine. The Forum is proud of the program which it is to present this year.

INFECTIOUS DISEASES IN LOUISIANA

The Louisiana State Board of Health reported that for the week ending October 9 the number of reportable diseases that occurred in figures greater than ten was remarkably small. There were listed 23 cases of pulmonary tuberculosis, 17 of measles, and 10 of typhus fever. The latter cases were scattered throughout the state, four of them being reported from Orleans Parish. In this week there were also reported two cases of poliomyelitis and three of undulant fever. For the week of October 16 there were listed 47 cases of pulmonary tuberculosis, 12 of malaria, and 10 each of scarlet fever, septic sore throat, and typhus fever. Again the typhus fever cases are reported from various parishes, no one having more than three cases. Listed as other diseases were 10 cases of unclassified pneumonia. For the week which terminated October 23, no diseases occurred in numbers greater than 10 except pulmonary tuberculosis of which 25 cases were reported to the State Board of Health. In this week there were found six cases of typhus fever, two of undulant fever, and one of poliomyelitis. For the last week in the month, October 30, pulmonary tuberculosis again was first with 26 cases, with 22 cases of malaria also being reported this week as the only two diseases which occurred in numbers greater than 10, except 20 cases of unclassified pneumonia. Twenty of the cases of malaria came from Jackson Parish. There were reported also four cases of typhus fever. The week ending November 6 was the week in which the venereal diseases were reported. For the previous month there were listed 2,329 cases of syphilis, 1,482 instances of gonorrhea, 73 of chancroid, 22 of lymphopathia venereum. The non-venereal diseases included 42 cases of tuberculosis, 15 of cancer, and 11 of typhus fever. Also were 16 cases of unclassified pneumonia. The majority of the cases of typhus fever were reported from Orleans Parish, with seven. Three cases of poliomyelitis were reported this week and four of malaria. Roughly about half of the cases of syphilis, about a third of the cases of gonorrhea, and about a sixth of the lymphopathia venereum were reported from military sources.

HEALTH OF NEW ORLEANS

The Bureau of the Census, Department of Commerce, reported that for the week which ended October 16 in the City of New Orleans, there were 135 deaths divided 85 white, 50 "all others." Twelve of these deaths were in children under one year of age. The following week the figures were almost exactly the same, there being one more death in the city than in the previous week. There were seven less white deaths and eight more deaths in colored people in this week. Praiseworthy was the fact that there were only seven

deaths in children under one year of age. For the week which terminated October 30, the 129 deaths that took place in the city were apportioned 90 white, 39 "all others," with nine deaths in children under one year of age. For the week which closed November 6, there was a rather sharp increase in the number of deaths in the City of New Orleans when 156 of the citizens succumbed as a result of disease or injury. This increase in part was due to the fact that there were 30 more deaths among the negroes listed than the previous week, but there were three less in the white population. Twenty-four children under one year of age died this particular week. The three year average for the corresponding week is 139 deaths. However, it must be borne in mind that the city has increased considerably in population since 1940.

DEATH OF CAPTAIN BAIRD

It is with regret that the Journal is informed that just prior to the publication of the paper "Pneumonia in the Army" by Lt. Colonel E. V. Allen and Captain Lester W. Baird, the latter died while in active service.

DR. H. E. BERNADAS

The following resolutions were passed at the meeting of the Executive Committee held on October 1, 1943:

WHEREAS, The untimely hand of death has taken from our midst our beloved comrade and stage counselor, Dr. Hector E. Barnadas, and

WHEREAS, In so doing, his untimely death

has deprived us of his calm, deliberate judgment and sound advice, always given freely and with mature judgment, and

WHEREAS, With his departure from our midst a vacancy will be left, which not even time can fill, as his genial disposition and sterling qualities will always be missed, and

WHEREAS, Our Council in which he was an honored member and chairman for many years will always look upon his vacant chair as the chair of a man who always held high the precepts of ethics in organized medicine;

THEREFORE BE IT RESOLVED, That we the members, officers and Council of the Louisiana State Medical Society, express our deepest and most sincere condolence to Mrs. Bernadas and the members of his family for the irreparable loss to them of a beloved husband and father. To them we say, in your hour of sorrow we feel for you and with you. So noble a gentleman was naturally a loving husband and father. Although never can his loss be replaced, may the assuaging hand of time mellow and gentle the blow which is now so hard to bear.

DR. ERWIN LOWE GILL

(1901-1943)

The many friends of Dr. Erwin L. Gill of Shreveport were shocked to hear of his sudden death as a result of suffocation from fire when his home burned down on October 31. Dr. Gill was one of the active practitioners in Shreveport. He graduated from Tulane in 1926 and thereafter served an internship in the Charity Hospital. He is survived by his widow and his son.

BOOK REVIEWS

Physiological Regulations: By Edward F. Adolph. Lancaster, Pa., The Jacques Cattell Press, 1943. Pp. 502. Price, \$7.50.

This monograph is neither a survey nor a review. It is, as the author states, a report of an investigation that become too extensive for presentation in a journal. As such, it is an unusual report which deserves the attention of all serious students interested in physiology in its broadest aspects. Written in the best tradition of J. S. Haldane and L. J. Henderson, to whom it is dedicated, the monograph is an attempt to visualize on a quantitative basis "what organisms do to maintain constancy not only of composition but of energies, forces, structures and functioning."

The book is divided into two parts. Part A deals with water regulation in animals. Beginning with the dog, the author presents and analyzes data showing the pattern of the regulation of its water content, intake and output, as seen under different experimental conditions. Much of the

material is taken from the author's own experiments. These were devised so as to provide for the measurement not only of the content of water and its change in relation to time, but also of all exchanges of water (gains and losses) in relation to increments in content of water. Careful analysis of the available data showed that in all excesses, losses are faster than gains. In all deficits, gains are faster than losses; thereby balance is recovered. Man, frog and many other species of animals, including several of the invertebrates, as well as organs, tissues and cells, are shown to have a pattern of equilibration similar to that of the dog.

Part B is devoted to analysis of data on heat, glucose, oxygen, carbon-dioxide, lactate, frequency of heart beat, and blood pressure. The pattern of equilibration is shown to be similar to that of water. Study of the inter-relations of several components of one organism and the simultaneous handling of components by that organism to mani-

fest the compatibilities and preferences in the contents and exchanges of each. Thus frequency of heart beat is, after a disturbance, stabilized in about six minutes, heat content only after two hours. "But their recoveries are not independent; rather the organism is constituted in such a manner that every component falls into an order relative to every other." The author concludes that the answer to the question as to what animals do to maintain their physiological constitutions and activities can be summarized in a sentence: "Animals preserve their constitutions and activities like themselves within the limits of variation that characterize the normal, either by preventing disturbances from occurring or by compensating for each actual and incipient departure from normal."

The latter part of the book is given over to a discussion of choosing physiological variables, the meanings of regulation, and some speculations concerning regulations. The reader who lacks the time or the interest to study the details presented will find the summaries which concludes each chapter adequate to enable him to follow the carefully developed induction arguments which lead to the broad and stimulating generalizations at the end of the book.

H. S. MAYERSON, Ph. D.

Man in Structure and Function: By Fritz Kahn, M. D. (Translated and edited by George Rosen, M. D.). New York, Alfred A. Knopf, 1943, 2 vols., Pp. xxxix + 742 + xiv, figs. 461. Price, \$10.00.

This work, originally published in German under the title "Der Mensch Gesund und Krank," is designed for the lay reader. It is a survey of the construction of the human body, with emphasis on functional considerations and maintenance of health.

The forty-nine chapters are grouped in ten sections, the headings of which will indicate the subjects treated: From electron to man (a consideration of the structure and fundamental biological activities of cells, together with a brief outline of embryology), skeleton, musculature, circulation of the blood, respiration, digestion, nutrition, nervous system, skin and the sensory organs, sex life. Simplicity of style is an outstanding feature of the text, which has a liveliness promising an appeal to the average reader. Complex structures and functions are made more readily understood by comparisons with objects and processes familiar in everyday life. Dimensions and other quantitative data likewise are translated, by the use of homely analogies, into terms of ordinary experience. The reader will profit also from the abundant illustrations. These pictures, in common with the text, are so planned as to attract and hold interest. Some of them are conventional illustrations, while in others the interesting unorthodox composition presents structures as if they

were in an anatomical fairyland. Thus, the growth of a bone is strikingly depicted in the form of a battle: "Blood vessels advance against the cartilage with young connective-tissue cells (warriors). The cartilage cells armour themselves with calcium, but are defeated and flee . . ." References to hygiene are sensibly chosen and plainly stated, the following being representative: "It is useless for the layman to pay any unnecessary attention to his blood-pressure. His blood-pressure is like bald-headedness—some people get it and others do not. There are families in which the members have a tendency to high blood pressure. If one belongs to such a family, the chances that one will succumb to hypertension are greater. Slight deviations from the normal blood-pressure level at a particular age are of little significance. As long as there is no pathological increase, the blood-pressure furnishes no standard by which to estimate the physical ability of an individual or his probable length of life. However, an individual with a pathologically high blood-pressure resembles a person who is excessively overweight; such a person is functionally less capable and in greater danger than a normal one. Effective remedies against high blood-pressure have not yet been found. The best remedy available at present is a healthy mode of life, which should begin while one is still young, and not when it is too late and the blood-pressure is already pathologically high."

For the intended purpose, these volumes may be recommended as a vivid account of the elements of human biology and hygiene. The occasional factual errors, which might be expected in any work of its kind, are of little consequence in view of the objectives of the book.

HAROLD CUMMINS, Ph. D.

Nasal Medication: By Noah D. Fabricant, M. D., M. S. Baltimore, The Williams & Wilkins Co., 1942. Pp. 122, figs. 20. Price, \$2.50.

A count of drugs in the subject index of this book shows 99 drugs which are used for nasal medication. The abuse or benefit to the nose from the use of these various medicines is effectively discussed by Fabricant. The indiscriminant use of drugs which have an adverse effect on nasal physiology is condemned.

The book is a step in the right direction but one feels that frequent revisions will be necessary to bring it abreast of the constant good, bad and indifferent additions to nasal therapy.

H. L. KEARNEY, M. D.

The Physiological Basis of Medical Practice: By Charles Herbert Best, M. A., M. D., D. Sc. (Lond.), F. R. S., F. R. C. P. and Norman Burke Taylor, M. D., F. R. S. (Canada), F. R. C. S. (Edin.), F. R. C. P. (Canada), M. R. C. S. (Eng.), L. R. C. P. (Lond). 3d ed. Baltimore,

The Williams and Wilkins Company, 1943. Pp. 1942. Price, \$10.00.

This textbook, first published in 1937, has become the standard and most popular work in physiology. The second edition appeared in 1939 and entailed an extensive revision and the addition of much new material. The present revision is, perhaps naturally, less extensive, but enough new material has been worked in to increase the size of the book by about 60 pages. There are still many typographical errors and a few obviously wrong statements which have been carried over (some from the first edition). The practitioner will find this text, linking together the preclinical subject of physiology and that of medical practice, well worth owning.

H. S. MAYERSON, PH. D.

The Principles and Practices of Industrial Medicine: Edited by Fred J. Wampler, M. D. Baltimore, The Williams & Wilkins Company, 1943. Pp. 579. Price \$6.00.

This book, edited by an experienced teacher of industrial medicine, is well planned and executed. The thirty-two men and women, who, in addition to the editor, have contributed chapters to the book, are experienced persons active in the various fields of industrial work, who have written clearly and precisely. Especially effective are the chapters on the effects of temperature, humidity and abnormal atmospheric pressure on industrial workers by Anna M. Baetjer, Sc. D., and lighting and vision by Matthew Luckeish, M. D. and Frank K. Moss, E. E. The numerous tables, graphs and charts of the entire book are well chosen, easily interpreted and decisive. Each chapter is followed by a carefully selected reference list and the book is well indexed.

Throughout the text attempts have been made to correlate the principles of industrial medicine with its practice. By the success of these attempts another good book has been contributed to the rapidly growing list of texts on industrial medicine.

RALPH H. HEEREN, M. D.

Hope Deferred: By Jeannette Seletz. New York, The Macmillan Co., 1943. Pp. 536. Price, \$2.75.

This is a novel which has to do with life in a medical school and a great hospital. Although written by a lay individual, evidently the authoress is thoroughly familiar with medical students and

their way of living and with hospital life in general; either this, or else she has had an excellent critic check up on the various things medical which enter into the novel.

The book is interesting and those who read it will probably enjoy a pleasant few hours, although pleasure will be all they will obtain, as, to say the least, the book is quite light.

The hero of the book and many of his friends seem to be living a life of continuous emotional upheaval. These psychological upsets do not occur, certainly in the great majority of medical students. Most of them do not turn pale and have all kinds of psychic and physical reactions when they first enter the dissecting room or see an operation or examine their first patient. Life in the hospital presents another series of mental turmoils. The lay reader will probably get the impression from this story that hospital life is secondarily concerned with the care of the patient and primarily with sexual problems of a personal nature concerning the people who conduct the institution. The technical points of hospital life are well pictured but certainly a hospital in which the personnel is so strongly motivated by sex, will not function efficiently. Certainly this hypothetical hospital is not like the average hospital or probably any hospital. However, the tale had to be unfolded and a story written so that the reader would be interested. This the authoress has managed to bring about. To the reviewer the sexual-emotional phase of the book was rather tiresome. Elsewhere the remainder was most readable and entertaining.

J. H. MUSSER, M. D.

PUBLICATIONS RECEIVED

W. B. Saunders Company, Philadelphia and London: A Textbook of Medicine by American Authors, Edited by Russell L. Cecil, A. B., M. D., Sc. D., 6th ed. Internal Medicine in General Practice, by Robert Pratt McCombs, M. D.

The Williams and Wilkins Company, Baltimore: Reaction to Injury, by Wiley D. Forbus, M. D. Synopsis of Tropical Medicine, by Sir Philip Manson-Bahr, C. M. G., D. S. O., M. D., F. R. C. P.

New York Academy of Sciences, New York: Annals of the New York Academy of Sciences, Volume XLIV, Art. 3, pages 189-262, Parasitic Diseases and American Participation in the War.

National Live Stock and Meat Board, Chicago, Illinois: Ten Lesson on Meat for Use in Schools.

New Orleans Medical

and

Surgical Journal

Vol. 96

JANUARY, 1944

No. 7

BAGASSOSIS

A CASE REPORT

S. CHAILLE JAMISON, M. D.†
MARGARET STRANGE BRYAN, M. D.†

AND

JANE MATTHEWS DAY, M. D.†
NEW ORLEANS

Involvement of the lung due to the inhalation of bagasse dust constitutes a clinical entity known as bagassosis. It is a rare condition, occurring apparently only in those individuals who are exposed to the dried material. The following case of bagassosis is being reported because of several interesting features which it presents.

CASE REPORT

The patient, a 32 year old negro male, was admitted to the medical wards of Charity Hospital on March 8, 1943, with a chief complaint of dyspnea. The onset of his illness began three weeks before admission, at which time he developed a cough productive of clear, mucoid sputum. The cough persisted and became gradually more severe, but at no time was the sputum blood-tinged. Weakness and malaise occurred to such an extent that the patient was compelled to remain away from work every second or third day. One week before admission, he became so short of breath that he was forced to remain in bed. At this time he experienced chilly sensations, and a daily elevation of temperature. There was no chest pain.

Past history revealed that the patient had always been in excellent health. In childhood he had had measles, mumps, and pertussis. At 16, he had gonorrhea. There was no history of syphilis.

The social history was interesting in that for eight months prior to admission the patient had been working in a celotex plant. His first work consisted of moving bales of damp cane grindings

from the sugar house to the fields. During this time he remained in good health. One month before admission his work was changed to that of moving the bagasse from the fields to the railroad cars for shipment. This bagasse was dry and often when the wind blew the air was so dusty that the workmen would have to turn away from the bagasse in order to breathe. They wore no masks, and the patient stated that many of the men quit working because the dust was so unpleasant.

Very few pertinent findings were noted on physical examination. He was a well developed, well nourished, colored male, 32 years of age, ambulatory and not acutely ill. The temperature was 100.8° F., pulse 92, respiration 23, and blood pressure 110/75. On inspection of the chest there was no lagging. Tactile fremitus was unimpaired. Percussion showed resonance over both lung areas except for a slight narrowing of Kronig's isthmus on the left. The character of the breath sounds, and vocal resonance showed no deviation from normal. Fine rales were heard at the right base. No other positive points were found on physical examination. A tentative diagnosis of pneumonitis, most probably occupational, was made.

Examination of the blood revealed a quantitative hemoglobin of 98 per cent and a white blood count of 12,800. The white blood count had fallen to 8,600 by the fourth hospital day. The urine was acid, specific gravity was 1.018, and there was no albumin or sugar present. Microscopic examination of the centrifuged sediment showed 30-50 white blood cells per high-power field. One week later after small doses of sulfathiazole (1/2 gram four times daily) the urine was negative and remained so the remainder of his hospital stay. The Kline and Kolmer tests were negative. The tuberculin skin tests with old tuberculin in dilutions of 1:10,000 and 1:1000 were both negative. Smears from three sputum samples were negative for acid-fast organisms. Examinations of the sputum for tubercle bacilli by the concentration method were likewise negative on three occasions. Fungi were searched for also in the sputum but not found.

The x-ray taken on admission (figure 1) was reported as follows: View of the chest shows infiltration throughout both lung fields, which has a slightly miliary appearance. There is enlarge-

†From the Department of Medicine, Tulane University School of Medicine.

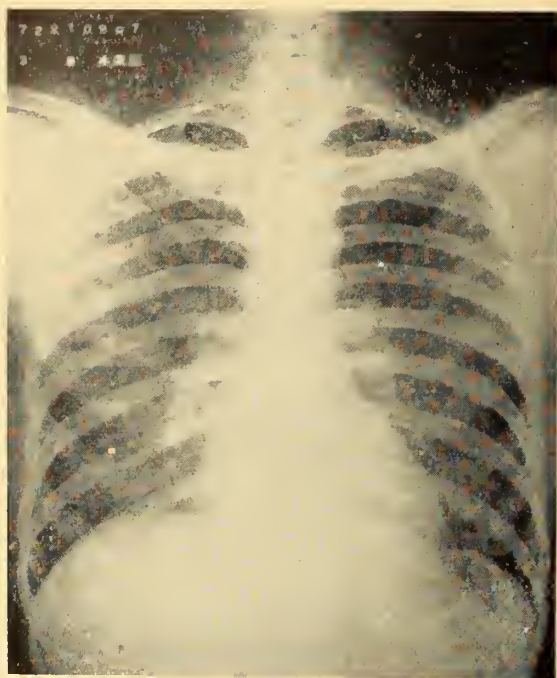


Fig. 1

ment of both hilar regions. Both apices appear to be clear. This could be due to atypical pneumonia or pneumoconiosis. Miliary tuberculosis would have to be ruled out.

The patient was given no specific medication. His temperature ranged between 98° and 102°

daily for the first ten hospital days. The daily elevations then became less over the next seven days. By the seventeenth hospital day, the daily temperature variation was less than 1° and remained so thereafter. His dyspnea gradually diminished and he was asymptomatic except for increased fatigability within two weeks. Physical findings were notably few. Occasional rales were heard during the first week but these were variable and inconstant.

X-ray examination on the tenth hospital day (March 18, 1943) showed no change in the diffuse infiltration throughout both lungs. Examination on the twenty-fourth hospital day (April 2, 1943) (figure 2) showed slight clearing of the chest since the last examination. The patient was discharged the following day completely asymptomatic. He was advised to limit his activities and return in one month for check-up.

The patient was readmitted on May 19, 1943, at which time he was asymptomatic and there were no abnormalities on physical examination of the chest. X-ray at this time (figure 3) was reported as showing considerable clearing of the diffuse infiltration in both lungs since the previous examinations.

The patient was readmitted again on July 1, 1943 and August 19, 1943. He had had no recurrence of symptoms and had started working as a wood-cutter. X-rays at these times (figures 4 and 5) showed further clearing of the lung fields since previous examinations.



Fig. 2



Fig. 3

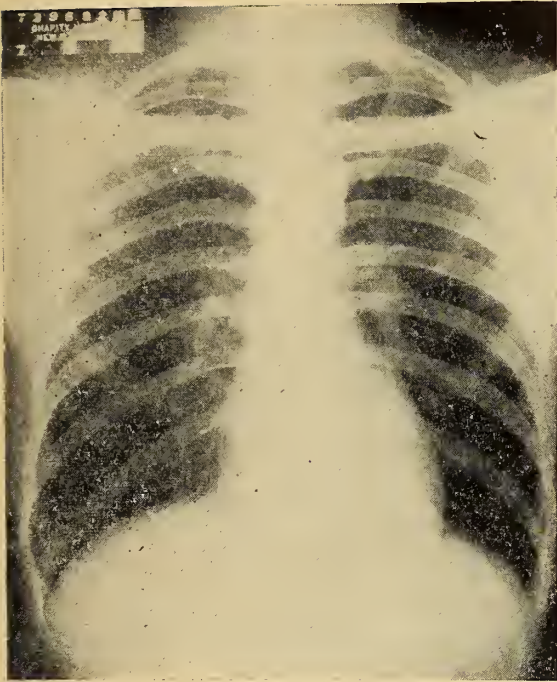


Fig. 4

CONCLUSION

It is felt that the diagnosis of bagassosis is justified in this case because of the clinical course, the failure to demonstrate the tubercle bacillus or other causative or-

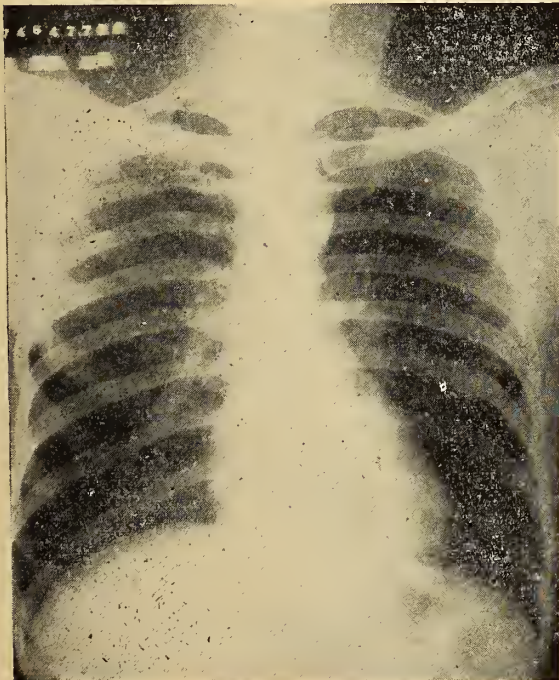


Fig. 5

ganism, and the history of exposure to bagasse dust. This case is particularly interesting for two reasons. First, it demonstrates that bagassosis may be contracted even when working out of doors with the dried material, and secondly that the disease is not a permanent condition, and recovery may occur over a period of a few months.

ADDENDUM

The following letter written to Dr. Jamison by Dr. Thaddeus I. St. Martin of Houma, appropriately should be placed here. The content of the letter is obvious and gives the opinion of a scholar and one well qualified to express his ideas as how correctly bagassosis should be spelled. Editorially speaking, there might be some criticism of the word, in that a word which Dr. St. Martin says is dependent upon an Anglo Saxon root has tacked to it a suffix which is from the Greek.

My Dear Dr. Jamison:

It is indeed a pleasure to join you in trying to correct a wrong, and deleting a "t" from the word "bagastosis" before Webster and Dorland come along and accept and justify it. The sum total of my researches for the evening are as follows:

1. Noah Webster: Bagasse: "(a) Crushed, juiceless sugar cane as it comes from the mill. . . (b) Beet pulp after the juice is pressed out. (c) The residue after the extraction of the fiber from sisal and other fiber plants." Under the "line" Webster gives "bagas" or "bagass."

2. Larousse: "Bagasse" or "Bagace." "(esp. Bagasa.)" . . . (Evidently an old word.) "Marc de raisin ou d'olivés, à la sortie du pressoir."

3. Sorgho and Imphee, by Henry S. Olcott, A. O. Moore, Agricultural Book Publisher, N. Y., 1857, page 53, gives spelling, "bagasse." Here mention is made of the sugar culture in China (p.p. 53-54). And no doubt the Chinese had a word for "bagasse." P. 86, "Meanwhile, the canes that have been crushed are no longer canes, but bagasse; they are received from the carrier as before stated, and spread to dry in the sun, to be subsequently stored away in appropriate sheds for the fuel of next year."

4. Britannica: "Bagasse, the name given to the fibrous residue resulting from the crushing of sugar-cane and the expression of its juices. Originally the term was applied in Provence, France, to refuse from olive-oil mills, hence anything worthless. The word was also used to describe a disreputable woman, and it appears in English as

"baggage." The root of bagasse is the Anglo-Saxon *baeg*, referring to the olive skin as a bag."

So, it seems to me that the spelling of "bagastosis," depending on the time and place, could easily have been varied. On Albion's Isle, depending on the circumstances: too much "females," *bagageosis*; too much olive skins, *baegosis*. In Spanish speaking countries, *bagasaosis*. In Provence, *bagasseosis* or *bagaccosis*. What it would have been in China or Africa is highly problematic. But here in America, with Louisiana as the pioneer in sugar culture, it would seem to me that the French spelling of *bagasse* would give us the spelling *bagassosis*, and the "t" that has slipped in surreptitiously should be deleted—unless there is something that has fallen in or dropped in that I know nothing about—then *bagasseptosis*.

Most sincerely,

THADDEUS I. ST. MARTIN, M. D.

P. S. I have just heard from a school teacher friend, who gives me the following information: The Spanish dictionary gives "bagazo." She referred me to Webster, caption "osis," meaning a condition, state, or disease—ex. "varicosis," in which the "e" has been dropped. Dorland gives about the same, but not much enlightenment. But in most of the word I can think of the "e" has been dropped. Accordingly, I vote for bagassosis.

EXPERIMENTAL STUDIES ON UREA PEROXIDE WITH CLOSTRIDIUM WELCHII IN VITRO AND IN VIVO*

MAXWELL KEPL, M. D.†
NEW ORLEANS

EMIL HAUSER, M. D.††
CHICAGO

GUY CALDWELL, M. D.††
NEW ORLEANS

and

ALTON OCHSNER, M. D.††
NEW ORLEANS

In a search for a suitable oxidizing agent that might have some beneficial effect upon *Clostridium welchii* infection in guinea pigs, the use of urea peroxide was suggested by one of us (Hauser).

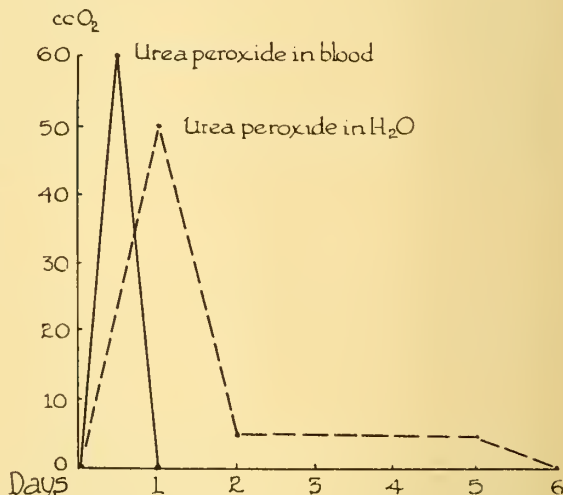
Preliminary experiments *in vitro* showed

*Read before the New Orleans Chapter of the American Federation for Clinical Research.

†Fellow in Orthopedic Surgery, Division of Medical Sciences, National Research Council.

††From the Departments of Surgery, School of Medicine, Tulane University, New Orleans, and Northwestern University, Chicago.

that 5 grams of urea peroxide when mixed with 50 c. c. of distilled water in an airtight system would evolve oxygen, as tested by a glowing splinter, at an early initial rate of 48.7 c. c. when collected at room temperature over water during a 24 hour period. After this period, about 5 c. c. of oxygen was collected for about five days. If 50 c. c. of citrated human blood was used instead of the distilled water, the reaction between the hemoglobin and peroxide was much more active causing a rapid evolution of oxygen and exhaustion of the substrate in a few hours. Results are shown in the chart.



If various dilutions of the peroxide were made from 1-10 to 1-5120 in distilled water, and if then was added an aliquot part of human plasma containing 0.1 c. c. of a 24 hour culture of *B. welchii* containing 1.6×10^9 bacteria, by actual count, there was an immediate effervescence which usually subsided within an hour. After this mixture was allowed to stand one hour, the contents of each tube were placed in a sterile milk tube and incubated at 37 degrees C. for 24 hours. These tubes were observed at eight hour intervals for beginning whey formation or "stormy" reaction. Results are shown in table 1.

Because of the promising results of the *in vitro* experiments, the following animal experiments were done: Twenty-eight guinea pigs, weighing between nine and

TABLE 1

Dilution	8 hours	16 hours	24 hours
1-10	0	0	0
1-20	0	0	±
1-40	0	0	±
1-80	0	±	±
1-160	0	±	±
1-320	0	+	+
1-640	0	+	+
1-1280	±	+	+
1-2560	±	+	+
1-5120	±	+	+

KEY

0 = No fermentation
 ± = Beginning fermentation
 + = Established ferment.

twelve ounces each, were used, 14 of them being used as controls. The animals were anesthetized with ether, and the right thigh shaved and surgically prepared with iodine and alcohol. Each animal was draped with sterile towels and an incision was made about 4 cm. in length on the lateral aspect of the thigh down to the deep fascia and muscles, using a sterile technic throughout. The muscles were exposed and cut transversely, and a few fibers were crushed with a hemostat. The wound edges were held wide apart, and 0.2 c. c. of a 24 hour meat broth culture of *B. welchii* was dropped

TABLE 2

No. of pigs	Therapeutic Agent	Average survival time (hours)
14	None	38.6
14	Urea peroxide 10 % in urea crystals	47.3

into the wound. Immediately after this procedure, 0.5 gram of sterile dirt was dusted into the wound which was then closed with three interrupted cotton sutures through the skin, closing the wound tightly. In those animals receiving treatment, 0.5 grams of 10 per cent urea peroxide intimately mixed with pure crystalline urea was dropped into the wound with a sterile spatula before closure. There was a marked effervescence in the wound after the administration of the drug which was allowed to subside before closure. All 28 of the guinea pigs died of gas gangrene. Those receiving the urea peroxide showed a survival time of 47.3 hours average. Those receiving no treatment survived 38.6 average hours.

Grossly, there was evidence of *Clostri-*

dium welchii infection. At autopsy, *Clostridium welchii* could be recovered from all of the infected animals. Histologic study of the area infected showed separation of the collagen fibers of the corium with injury to the hair follicles. There was necrosis, fragmentation, and separation of the muscle fibers with a necrotic, fibrinous exudate between the muscle fibers.

CONCLUSION

Using the technic outlined in this paper, urea peroxide does not markedly influence *Clostridium welchii* in guinea pigs. Inhibition of bacterial growth was noted in the *in vitro* experiments.

WORLD WARS AND THEIR BEARING ON MEDICAL PRACTICE, WITH SPECIAL REFERENCE TO DIGESTIVE AND TROPICAL DISEASES*

GEORGE B. EUSTERMAN, M. D.†
 ROCHESTER, MINN.

Apart from the accidents of training maneuvers, the casualties of actual combat and the exotic diseases inseparable from the prosecution of a global war, the medical experiences of those concerned with the armed forces are in large measure identical with those encountered in civil practice. From a background of service in several base hospitals in the deep South during the first World War, and in the light of developments that have already occurred in the present world conflict, I thought it appropriate to appraise the changing scene because of its significance to certain aspects of future medical practice, especially from the standpoints of gastroenterologic and tropical disease.

In my opinion, too much emphasis and publicity have been given formerly to the problems presented by acute infections, venereal disease, tuberculosis and disorders of the heart, important as these may be. The impression prevailed that disorders of other systems were of secondary impor-

*Read before the seventh annual meeting of the New Orleans Graduate Medical Assembly, New Orleans, March 15, 1943.

†From the Division of Medicine, Mayo Clinic, Rochester, Minn.

tance. Of course, there was one explanation for this in the first World War, namely, the prevalence of such severe, widespread epidemics as influenza, pneumonia, cerebrospinal meningitis, measles and their sequelae, which so far have happily been spared us in the present war. But in view of prevailing conditions, if soldiers are to receive medical attention equal to that available in civil life, the military medical services, as emphasized by Pepper,¹ must be prepared to meet every type of general medical disease and must have all the necessary diagnostic and therapeutic equipment. Fortunately, the diverse needs of the armed forces have been anticipated in time, so that the modern hospitals of the army and navy are models of scientific organization and equipment, and are prepared for any emergency.

During World War I, unfamiliarity of the medical profession with details concerning the incidence, diagnosis and treatment of the commoner lesions and functional disorders of the digestive tract was apparent. The institution where I had worked had been one of the pioneers in development of knowledge of gastrointestinal diseases in this country. Therefore, perhaps my awareness of shortcomings in this respect was

increased. Almost without exception, contemporary writers convey the impression that the high incidence of gastric and duodenal ulcer largely has been a development since the cataclysm of 1917-18. In support of this contention, such writers may point to Hinton's² report of the increase in the ratio of peptic ulcers among patients admitted to Bellevue Hospital, or to the increasing number of patients with chronic peptic ulcer seen at the Mayo Clinic, or to both. But it is impossible, from institutional records, to determine the incidence of any disease or condition in the general population, since the total registration in a hospital or clinic are not a representative sample of the general population. Sampling to discover the true incidence of peptic ulcer is difficult and has not been done.

The broken line in figure 1 gives the impression that the incidence of ulcer is on the upgrade. The solid line, however, does not uphold this impression. Had I made an analysis just prior to 1930, undoubtedly I would have come to a conclusion similar to that of some others, namely, that ulcer was on the increase. However, an analysis made during the period from 1927 to 1936 inclusive might well have startled the observer. Thus the results appear to depend

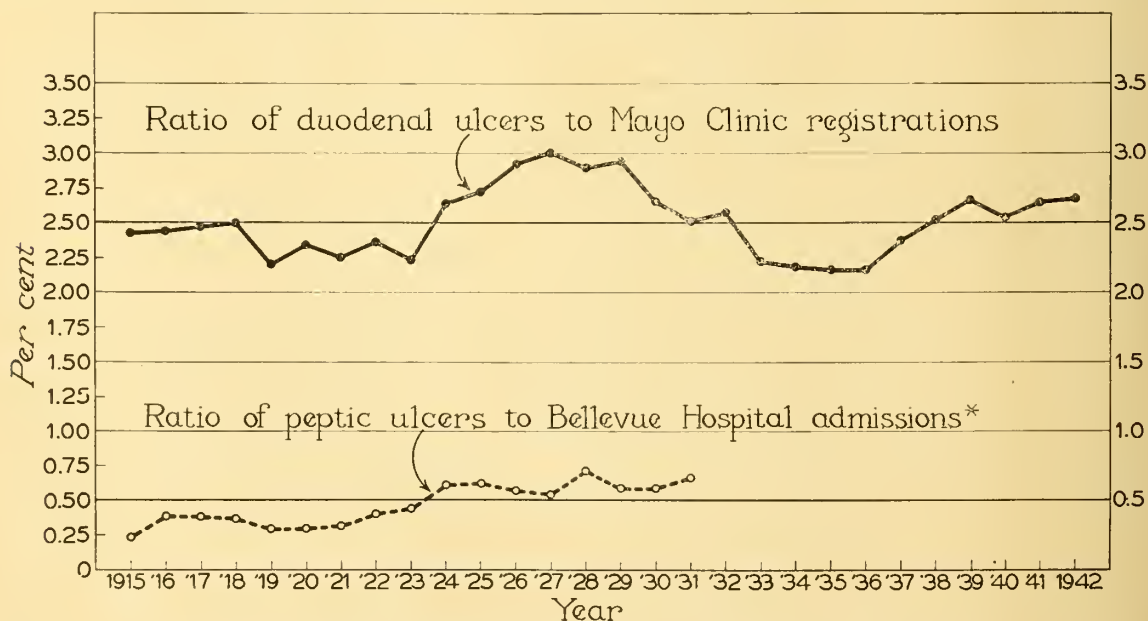


Fig. 1. Incidence of duodenal ulcer among patients. *From Hinton.²

on the period chosen for analysis. It is true that more patients with ulcer are being seen by the physicians at the Mayo Clinic. However, total registrations have increased proportionately. Considering the picture as a whole, there is no evidence that the incidence of ulcer is increasing.

My experience strongly inclines me to the belief that chronic peptic ulcer, especially duodenal ulcer, had been a prevalent disorder of the civil adult population for an undetermined number of years antedating the first World War. As early as 1908, the late Dr. W. J. Mayo,³ in a report of 272 cases of surgically verified duodenal ulcer, made the following significant comment: "Surgical invasion of the upper abdominal region has gradually enabled us to replace theory with facts, the fallacious clinical observations have given way before actual demonstrations of disease conditions." With the advent and development of objective methods of diagnosis, in particular roentgenographic examination, the number of patients annually coming under observation markedly increased. Such evaluation, plus the fact that members of the medical profession were becoming increasingly mindful of ulcer, seems to be the logical explanation of the apparently increased incidence of ulcer.

DISEASES OF THE DIGESTIVE TRACT

The role played by digestive disorders in military service always has been important and such disorders, as I have observed previously, are in general similar to those encountered in civil life. The professional personnel of many military hospitals in the first World War sensed their inexperience in this field, so that special educational facilities in some instances were provided by those with specialized knowledge. This state of affairs furnished the incentive for a movement begun in 1917, the successful culmination of which twenty-three years later made gastroenterology one of six sections comprising the medical service of the new cantonment type mobilization plan general hospital. A brief history of this movement and of other interesting associated details has been recorded by Kantor.⁴

The justification and necessity of such innovation is attested in various ways. As Breed⁵ has aptly pointed out, important advances in medical science during the last quarter century have been made by well trained internists in the special fields: "They have refined diagnostic procedures, established standards of treatment and given impetus to scientific research in all branches of medicine. By their efforts, method and implements of precision, making for speedier and more accurate diagnosis, have been developed and extended freely to the large group of practitioners."

The wisdom and timeliness of such special hospital organization is obvious in the light of developments during the present war. Military medical literature of the past three years is replete with reports uniformly stressing the high incidence of gastric disorders, especially duodenal ulcer, in the armed forces. The incidence of ulcer varies from 35 to 55 per cent in hospitalized patients. Editorials in leading Canadian and British medical journals have emphasized the fact that diseases of the digestive tract are the most important medical problem of the war and that dyspepsia represents the single most prevalent type of disease among military patients. The significance of this state of affairs seems to be epitomized in the expression "duodenal ulcer battalions" found in a recent communication from Brown.⁶ Of immediate interest to the civilian practitioner is the fact that from two-thirds to nine-tenths of patients admitted to hospitals of the army and navy presented evidence of having had duodenal or gastric ulceration prior to induction into the British armed forces. It is reasonable to presume that a similar state of affairs will be found to exist among our own forces in the same age brackets, with the possible exception that the ratio of gastric to duodenal ulcer is somewhat higher in Britain, as shown in tables 1 and 2.

After a considered review of the recorded military medical experience of the present war, and with the backdrop of extensive experience in the diagnosis and treat-

TABLE 1
LAWSON GENERAL HOSPITAL²⁰

Total number admissions October 1, 1941- May 1, 1942.....	3492
Total number admissions:	
To medical service.....	1755
To gastrointestinal section.....	316
Number with peptic ulcer.....	98*
Number with gastric ulcer.....	3
Number with duodenal ulcer.....	95
Number with functional digestive disease	113

*31%

TABLE 2
ANALYSIS OF 2,500 ADMISSIONS TO BRITISH
MILITARY HOSPITALS FOR DYSPEPSIA²⁰

	Per cent
Duodenal ulcer.....	32.5
Gastric ulcer.....	9.2
Peptic ulcer.....	8.0
Hematemesis and melena.....	2.2
	51.9
Gastritis (functional dyspepsia).....	35.0
Gastro-enteritis and colitis.....	6.8
Appendicitis	2.3
Cholecystitis	0.8
Carcinoma	0.3
Miscellaneous	2.9
	100.0

ment of gastrointestinal disorders in civil practice, I am motivated to discuss some of the varied problems confronting members of the medical profession and the bearing of these problems on present and future medical practice. In the first place, it might reasonably be asked what role, if any, does training and combat play in the genesis of organic gastroduodenal disease? In my opinion one investigation is necessary to solution of this important problem, namely; a complete gastrointestinal study of draftees before their induction into the army. I wonder if the best will be made of opportunities in this respect? A little more than a year ago, Saslaw and Junkermann⁷ reported the results of a study of the medical aspects of the Selective Service System in this country but they did not mention digestive disorders (except insufficient teeth, gingivitis and hemorrhoids) as causes of rejection of 1752 white men and negroes during a period of three months in the spring of 1941. In contrast to this, gastrointestinal disorders in Canada

caused more rejections than any other disability except defective vision. Disregard of gastrointestinal disease on the part of our local draft boards is not conducive to increase of knowledge in this field. Selectees lend themselves admirably to the study of the genesis of ulcer. In experience at the clinic more than two-thirds of the patients with proved duodenal ulcer and more than half of those with gastric ulcer first presented symptoms of the disorder between the ages of eleven and thirty years.

I realize the obstacles in the way of investigation of the gastrointestinal tract during the stress of war; shortage of qualified roentgenologists, and the time required for thorough examination in this field, in contrast to the more expeditious examination of the pulmonary system, for example. But the possibilities of such study, from a scientific and economic standpoint alone, cannot be denied. The high incidence of proved ulcer and of complaints similar to those made by persons who have ulcer, the latter often classified as arising from "duodenitis," in the armed forces, at least justifies the conclusion that military life is an aggravating, if not an actually causative, factor. This impression receives further support by observations made on civilians living in combat zones and on industrial workers. Stewart and Winsor⁸ reported the increased incidence of perforations from ulcer during heavy air raids in London and surrounding cities and Riley⁹ reported similar data from Newcastle-on-Tyne. Rothe's¹⁰ extensive roentgenologic studies concerned with ammunition workers of the Krupp factories, and their families, led him to conclude that there was an actual increase of organic diseases, especially duodenal ulcer, during the three years ending October 30, 1940.

Much of what has been said concerning chronic gastroduodenal ulcer also applies to chronic gastritis, especially the hypertrophic variety. It is reasonable to infer that the vicissitudes of war, characterized by periods of extreme nervous and physical fatigue, by the necessity of hasty eating of coarse and poorly prepared food and cold

rations, by long and irregular intervals between meals and by abuse of alcohol and tobacco, predispose to inflammation or ulceration. Moreover, emotional conflict, involving anxiety, hostility and resentment has full sway. Wolf and Wolff,¹¹ in convincing fashion, have demonstrated the potentialities for ulceration under such circumstances. It will be recalled that Schindler¹² made some of his first important observations on gastritis in examination of German soldiers following the first World War. Reports regarding this disease, from British and most continental sources, are unreliable, as the diagnoses were not verified by gastroscopic examinations. The observations of Henkel¹³ impress the reader with the importance of gastroscopic procedures. By the termination of hostilities a proper appraisal of this entity, so far as armed forces of the United States are concerned, should be forthcoming through the work of such well trained and competent observers as Chamberlin,¹⁴ Kantor,⁴ Berk¹⁵ and medical officers of the army and navy now active in the services.

Gastrointestinal neurosis, that is, a so-called functional disorder without demonstrable evidence of organic disease, is a characteristic of from 18 to 35 per cent of patients in United States military hospitals. Berk¹⁵ stated that this group of patients comprised a much larger percentage of admissions to general hospitals of the army and navy in the United States than has been the experience of the British and Canadians. The situation is about the same as that which obtains in civilian practice. Apart from the malingerers, there is the same percentage of biologically inadequate, neuropathic and psychopathic individuals. To what extent mobilization and training are conducive to this type of disorder is controversial. Many authorities are inclined to minimize them. Such unfavorable factors as separation from occupation and home ties are usually compensated for by security of occupation and income, however modest, or by removal of the individual from uncongenial surroundings or vocation or from one of a variety of conflicts.

Of course the effect of actual combat, chiefly of a psychoneurotic nature, is another matter.

While the medical personnel and the diagnostic and therapeutic equipment of the modern army or navy hospital leaves little to be desired, the difficulties of diagnosis, treatment and disposition of the group of patients here under consideration still persists to a considerable degree. According to Chamberlin,¹⁴ half of the small series of patients with irritable colons and duodenitis (pre-ulcerous symptoms, or dyspepsia resulting from chronic abuse of alcohol) were returned to duty, but only a small percentage of the constitutionally inadequate, mentally deficient or definitely psychoneurotic were fit to be so returned. One encouraging result obtained in several general hospitals with well trained specialized personnel, including psychiatrists, was rehabilitation of many of those discharged from the army; this permitted their return to a more useful degree of civil life than would have been possible otherwise.

A soldier or officer with an active ulcer faces a gloomy outlook as far as a military career is concerned. The same is true of one with hypertrophic gastritis, with or without erosion or ulceration. It is the fixed policy of medical authorities of the army and navy eventually to discharge every enlisted man who has an active ulcer. Whether this policy will undergo modification in the future, such as it has undergone in other warring countries as the reserve man power gradually has shrunk, remains to be seen. It is the policy of the Surgeon General's office of the army to accept, for limited service only, applicants for commissions as officers who give histories of gastric or duodenal ulcer, provided such histories indicate freedom from activity during the preceding five years, and provided further that the gastrointestinal roentgenologic study at the time of examination gives a negative result. Military and medical authorities have commented on the conscientious, resourceful and aggressive nature of the average officer who has an ulcer. Because of these characteristics, his

services frequently are retained for limited military duty, a circumstance which usually makes possible for him proper rest, diet, interval feeding and medication.

Certain conclusions can be drawn from the foregoing in terms of civilian practice "when Johnnie comes marching home." First of all to be borne in mind is the prevalence of peptic ulcer and its equivalents in the adult population, and to less degree its congener, gastritis. These are usually disabling diseases, especially under the exigencies of military life. To render them less disabling in civil life and at the same time to prevent serious complications, patients who have ulcer should be treated adequately during the inception of the disease, at a time when permanent cure can be more readily accomplished. Individuals predestined to have a gastrointestinal lesion or to be troubled by gastrointestinal dysfunction will, in all likelihood, experience its development during the period of intensive training and active combat service. Neurotic patients who have haunted offices of physicians in ante bellum days may visit those offices less frequently in post bellum days if the patients have had the advantage of proper management in general hospitals of the army or navy before their discharge. This conjecture also provides a therapeutic hint to the civilian practitioner.

TROPICAL DISEASES

Undoubtedly exceeding in clinical importance the gastrointestinal disorders of the armed forces just discussed, are tropical diseases. With few exceptions the expeditionary forces of the army, navy, and air corps and all auxiliary branches have been sent to outposts of our continent and to foreign lands in which tropical diseases of every description are rampant. This presupposes wholesale infection and importation of such diseases, the timely recognition and successful treatment of which constitutes a challenge to every practitioner. Are we practitioners prepared to meet it?

Today we are witness to the paradox that while tropical medicine is a field in which some of the most noteworthy achievements have been made by American physicians,

it has not been one of the major specialties of American medicine. Graduates of Tulane and Harvard universities are fortunate in this respect, as these institutions have had departments of tropical medicine for some time. Graduates of Tulane, and members of its faculty, have been pioneers in valuable contributions to knowledge in this now all important field. With that energy which characterizes the American people, the Surgeon Generals of the army, navy, and United States Public Health Service, the National Research Council, various research foundations, educational institutions, state public health authorities, and the profession as a whole, in diverse ways, have taken steps to meet the threatened emergency and to minimize so far as possible educational shortcomings. Nevertheless, the average physician must sense his unpreparedness to deal with the multiplicity of problems with which he may be confronted. This is especially true if he is mindful of the imposing array of protozoal, parasitic, bacillary and helminthic disorders, to say nothing of those due to viruses, rickettsias, and various fungi. Moreover, successful diagnosis and treatment presupposes familiarity with laboratory methods, which is usually lacking. However, the resourceful physician will rise to the occasion by becoming mindful of tropical disease first of all, and by delving generously into standard texts on tropical diseases such as that by Craig and Faust,¹⁶ Strong's¹⁷ revision of Stitt's two volumes, Manson-Bahr's¹⁸ work, and others. He will familiarize himself with the geographical distribution of the major diseases as outlined graphically in these texts, and will attend refresher courses whenever the opportunity presents itself. Current articles will provide instructive, up-to-date information.¹⁹

A brief practical consideration of the more important tropical diseases may not be amiss. Some of these diseases, especially the great plagues such as cholera, typhus fever, bubonic plague and yellow fever, which so far probably have not reached epidemic proportions, either "kill or cure," as the saying goes. At least their sequelae

are not of such great moment to the civil population. Vaccination against yellow fever apparently affords complete and permanent protection; that against cholera and bubonic plague is only partial and perhaps of short duration. Epidemic, louse-borne typhus fever remains one of the greatest threats to armies, prison camps and to starving populations in the cooler climates. Vaccination as a preventive measure is of promise.

Malaria has been properly called the scourge of the present war. In the opinion of no less an authority than Strong,¹⁷ from the standpoint of prevalence, this disease appears to be the most important of all diseases in the world today. The benign tertian and quartan types, although rarely fatal, may cause great disability, but the malignant tertian or estivo-autumnal type is often fatal and frequently is associated with severe complications such as blackwater fever and profound anemia. The circumstances under which the disease is contracted by members of the fighting forces should intensify its inherently malignant nature. Always to be remembered is the fact that the first manifestations of malignant malaria may occur after the infected individual has returned to his civilian environment. Increasing resort to travel by airplane will increase such occurrences, as it will also increase the menace of transmission of the disease, as pointed out by Jackson.²⁰

Because of its diagnostic import, the protean nature of malaria, especially the estivo-autumnal form, should be emphasized. It may simulate almost any other known disease, especially in countries where it is endemic. Involvement of the brain, and other portions of the central nervous system, can give rise to a variety of symptom complexes and diagnostic difficulties of the first order. Manson-Bahr²¹ stated that abdominal emergencies, such as the acute forms of appendicitis, cholecystitis and pancreatitis, and even intestinal obstruction, may be simulated during the acute stages of the infection. In a concise, authoritative article dealing with the essential as-

pects of diagnosis and treatment, Yorke,²² of England, illustrated the method of preparation of thin and thick blood films. These the practitioner should be able to prepare for sending to a pathologic laboratory for examination. Yorke took the attitude that every sick individual who has recently returned from a malarial country is suspect, even in the absence of a history of previous attacks, unless some other diagnosis is obvious. If the patient is anemic and if the spleen is enlarged, suspicion is increased; but absence of such signs does not exclude malaria. Should there be a delay of several days before a report is received from the laboratory, antimalarial treatment is instituted at once if the patient is ill, in order to safeguard against possible catastrophe. No harm is done if the disease is nonexistent. Reference must be made to a compilation of forty-four contributions dealing exclusively with malaria of man published as a symposium by the American Association for the Advancement of Science,²³ which will well repay the reader. While most authorities are agreed as to general principles of the treatment of malaria, there is much difference of opinion as to details. The minimal antimalarial course of four weeks recently outlined by Dove²⁴ should appeal to most practitioners.

According to the British medical history of the first World War, bacillary dysentery took the place of second importance among war diseases. In the Gallipoli campaign this disease was responsible for the majority of the 120,000 casualties evacuated from the peninsula within three months. In its epidemic forms it has been particularly a disease of armies in the field. It is of more frequent occurrence and often is more virulent in the tropics than elsewhere. In India, Malaya and the Pacific Islands the disease is responsible for widespread epidemics with high mortality. The menace to our civilian population on the return of infected soldiers is obvious. It is estimated that of every 100 individuals affected, about twenty become carriers for several months and are the source of fresh epidemics.

Many physicians have regarded bacillary

dysentery as a self-limited disease, the acute manifestations of which last for ten days to two weeks, followed by a convalescent period. But the observations of many authorities in tropical medicine, including those of Silverman and Friedrichs,²⁵ D'Antoni,²⁶ and others in this country, go to prove that the disease may persist in a chronic form, which may closely resemble chronic ulcerative colitis. Manson-Bahr²⁷ said the appearance of the intestine in this stage reminded him of the cobblestones of some old French town. He maintained that chronic bacillary dysentery was one of the common causes of chronic diarrhea in the tropics. Silverman and Friedrichs²⁵ insisted that the chronic form was increasing in this country and that it might give rise to such complications as arthritis, myocarditis, vascular dysfunction, or even obstructive spasm and acute perforation.

There are, of course, many other important causes of diarrhea. If the patient has recently been in the tropics, or is living in close proximity to one who has been there, the other "tropical" diarrheas should be borne in mind, namely; amebic dysentery, helminthic dysentery which is due to the bilharzial flukes, especially *Bilharzia mansoni*, and the diarrhea associated with malaria of the estivo-autumnal type. The last may give rise to a form of acute enteritis with hemorrhage, closely simulating amebic dysentery.

Next in importance to malaria and the dysenteries, in my judgment, are leishmaniasis, especially the visceral form known as kala-azar, schistosomiasis or bilharziasis, and filariasis. Less important perhaps are trypanosomiasis, of which there are both the African and American types, and relapsing fever. The major portion of our armed forces abroad are constantly exposed to these diseases. Involvement of abdominal viscera is a conspicuous feature of the first two.

It is now a quarter of a century since I had my first experience with kala-azar. The patient was a middle-aged man, an American missionary, who on examination was found to have an enlarged spleen, anemia

and malnutrition. The fact that he had been stationed in Assam, one of the four heavily infected provinces of India, coupled with a history of prolonged, intermittent fever early in the course of his difficulties, aroused my suspicions as to the cause underlying the splenomegaly. *Leishmania donovani* were not present in the circulating blood but were found on splenic puncture. Response to treatment with antimony was satisfactory. Fuadin (neoantimosan—Bayer) appears to be the most effective preparation at present. It is to be remembered that American leishmaniasis, espundia, extends from Yucatan to the Argentine.

Of the three forms of schistosomiasis (bilharzias)—the oriental or Japanese, the vesical or urinary, and the mansonic or so-called intestinal—we, in this country are more familiar with the last two than with the first. If one has seen service in the tropics and gives a history of hematuria or of abdominal complaint of any kind, especially in association with hepatosplenic enlargement, fever with eosinophilia, or hepatic cirrhosis, this disease should be considered. Search should be made for the eggs in the urine or feces. If ova are present, they should be recognized easily because of their characteristic appearance. The recent report by Blum and Lilga²⁸ of two cases of hematuria due to schistosoma hematobium, occurring in Northern Michigan, is of interest in this connection. Tartar emetic or fuadin is employed in the treatment of this disorder.

Filariasis, due to infestation with *Wuchereria bancrofti*, is also wide in distribution, especially in India, South China, the Dutch East Indies and the neighboring islands of the Pacific. It is known to extend southward from Charleston, South Carolina to the Argentine. The disease is especially prevalent in the Virgin Islands. It has been reported that many American soldiers in North Africa have been infested. Elephantiasis of the legs, hydrocele, lymph scrotum and chyluria are the most commonly occurring manifestations of the disease. Chylous ascites appears to be of rare occurrence. I

recall one case of chyluria in which the patient was a middle-aged American woman who, on several occasions, had spent the winter months in Egypt. Unfortunately, there is no effective form of treatment for this infection of which I am aware. However, we corrected the chyluria in this particular instance by over-distension of the renal pelves.

REFERENCES

1. Pepper, O. H. P.: Disease expectancy in the new army, *War. Med.*, 1:463, 1941.
2. Hinton, J. W.: Incidence of peptic ulcer and its complications, *Am. J. Surg.*, 20:102, 1933.
3. Mayo, W. J.: Ulcer of the duodenum, with a report of 272 operations, *J. A. M. A.*, 51:556, 1908.
4. Kantor, J. L.: Digestive diseases and military service; with special references to the medical department of the U. S. Army, *J. A. M. A.*, 120:254, 1942.
5. Breed, W. B.: Specialization in internal medicine, *Ann. Int. Med.*, 14:711, 1940.
6. Brown, F. R.: Duodenal ulcer battalions, *Brit. M. J.*, 1:530, 1942.
7. Saslaw, M. S., and Junkermann, C. S.: Medical aspects of the Selective Service System; follow-up study, *War Med.*, 2:99, 1942.
8. Stewart, D. N., and Winsor, D. M. de R.: Incidence of perforated peptic ulcer; effect of heavy air-raids, *Lancet*, 1:259, 1942.
9. Riley, I. D.: Perforated peptic ulcer in war-time, *Lancet*, 2:485, 1942.
10. Rothe, H.: Zunahme der Magen- und Zwölffingerdarmgeschwüre in Kriege? *Deutsche med. Wchnschr.*, 67:810, 1941.
11. Wolf, Stewart, and Wolff, H. G.: Evidence of the genesis of peptic ulcer in man, *J. A. M. A.*, 120:670, 1942.
12. Schindler, Rudolf: On the importance of the gastroscope in the diagnosis of gastric diseases in the army, *Brit. M. J.*, 1:243, 1940.
13. Henkel, K.: Die Gastroskopie zur Erweiterung der Magendiagnostik in der Wehrmedizin, *München. med. Wchnschr.*, 89: 599, 1942.
14. Chamberlin, D. T.: Functional digestive disease as seen in Lawson General Hospital, *J. A. M. Georgia*, 32:40, 1943.
15. Berk, J. E.: Discussion, *J. A. M. A.*, 120:261, 1942.
16. Craig, C. F., and Faust, E. C.: *Clinical Parasitology*, Ed. 2, Philadelphia, Lea & Febiger, 1940, 772 pp.
17. Strong, R. P.: *Stitt's Diagnosis, Prevention and Treatment of Tropical Diseases*, Ed. 6, Philadelphia, The Blakiston Company, 1942, vols. 1 and 2, 1747 pp.
18. Manson-Bahr, P. H.: *Manson's Tropical Diseases*, Ed. 11, Baltimore, Williams & Wilkins Company, 1940, 1083 pp.
19. Saunders, G. M.: Medical condition in the West Indies, *Mil. Surgeon*, 89:621, 1941.
20. Jackson, W. P.: The airplane: a possible means of transmission of disease, *Virginia M. Monthly*, 69:29, 1942.
21. Manson-Bahr, P.: Malaria in war time (1), *Brit. M. J.*, 2:489, 1942.
22. Yorke, Warrington: The diagnosis and treatment of malaria in England, *Brit. M. J.*, 1:61, 1942.
23. Moulton, F. R.: A symposium on human malaria; with special reference to North America and the Caribbean Region. Washington D. C., American Association for the Advancement of Science, 1941, 398 pp.
24. Dove, W. S.: The treatment of malaria, *Am. J. Trop. Med.*, 22:227, 1942.

25. Silverman, D. N., and Friedrich, A. V.: Increasing incidence and complications of chronic bacillary dysentery, *New Orleans M. & S. J.*, 95:401, 1943.
26. D'Antoni, J. S.: Amebic and bacillary colitis in the New Orleans area, *Am. J. Trop. Med.*, 22:319, 1942.
27. Manson-Bahr, P. H.: Dysentery and diarrhea in war time, *Brit. M. J.*, 1:346, 1942.
28. Blum, B. B., and Lilga, H. V.: Schistosomiasis infections; report of two cases found in northern Michigan, *J. A. M. A.*, 121:125, 1943.
29. Chamberlin, D. T.: Peptic ulcer and irritable colon in the army, *Am. J. Digest. Dis.*, 9:245, 1942.
30. Tidy, H. L.: Dyspepsia in the forces, *J. Roy. Army M. Corps*, 77:113, 1941.

THE DIAGNOSTIC CONFUSION BETWEEN ACUTE APPENDICITIS AND PELVIC INFLAMMATORY DISEASE*

FREDERICK FITZHERBERT BOYCE, M. D.†
NEW ORLEANS

A fitting introduction to the diagnostic confusion between acute appendicitis and pelvic inflammatory disease is a group of case histories illustrative of the confusion:

CASE NO. 1

A colored woman, 21 years of age, had suffered for 72 hours from lower abdominal pain, nausea and vomiting. She had had several similar acute attacks during the past year, during which she had also had a profuse vaginal discharge. The temperature was 99.6° F. and the pulse rate 120 per minute. Physical examination revealed generalized abdominal tenderness and rigidity, most marked below the umbilicus and in both lower quadrants. Pelvic and rectal examination revealed bilateral tenderness.

CASE NO. 2

A colored woman, 36 years of age, was set upon and beaten by five men five days before her admission to the hospital. An hour later she developed acute abdominal pain, nausea and vomiting. Two days afterward she developed a profuse vaginal discharge and burning on urination. The temperature on admission was 99° F., and shortly thereafter rose to 103° F. The pulse rate was 90 per minute. Physical examination revealed tenderness and rebound tenderness in the right iliac fossa, with generalized rigidity, more marked in the upper abdomen. Pelvic examination revealed bilateral tenderness and multiple uterine fibroids. The white blood cell count was 33,900 per cu. mm. and the polymorphonuclear leukocyte percentage was 87. The sedimentation rate was 26 minutes.

*Read before the Orleans Parish Medical Society, May 24, 1943.

†From Charity Hospital of Louisiana at New Orleans.

Special examinations, undertaken on a diagnosis of kidney injury, were negative.

CASE NO. 3

A white woman, 32 years of age, was awakened from sleep 12 hours before admission to the hospital by a stabbing pain in the right lower quadrant of the abdomen, followed by nausea and vomiting. The temperature was 99° F. and the pulse rate 90 per minute. Physical examination revealed tenderness and rebound tenderness in the right iliac fossa, and pelvic examination revealed bilateral tenderness. The white blood cell count was 12,600 per cu. mm. and the polymorphonuclear leukocyte percentage was 78. The sedimentation rate was 14 minutes.

CASE NO. 4

A colored woman, 20 years of age, took a purgative, for no apparent reason, 36 hours before admission to the hospital. Twelve hours later she developed paraumbilical pain which radiated to and still later was localized in the right iliac fossa. She was nauseated but did not vomit. Twelve hours later the onset of her period and of diarrhea occurred simultaneously. The temperature was 100° F. and the pulse rate 98 per minute. Physical examination showed marked tenderness, rebound tenderness, and rigidity in the right lower quadrant, where a possible mass was felt. The white blood cell count was 26,000 per cu. mm. and the polymorphonuclear leukocyte percentage was 90, with 36 stabs. The sedimentation rate was 30 minutes.

The patients described in cases 1 and 2 were treated conservatively for pelvic inflammatory disease, and postmortem examination in each case revealed ruptured appendicitis and generalized peritonitis, associated in the first case with extreme fatty metamorphosis of the liver and in the second with subphrenic abscess. Operation was carried out in cases 3 and 4 on a diagnosis of acute appendicitis. Both patients had acute pelvic inflammatory disease, associated in case 4 with purulent pelvic peritonitis. Wisdom after the event comes to us all, but I doubt whether in the emergency any of us, whether surgeon or gynecologist, would have managed any of these cases differently.

ANALYSIS OF CASES

As the basis of this discussion I have analyzed in detail 60 cases of acute pelvic inflammatory disease in which emergency surgery was done on the mistaken diag-

nosis of acute appendicitis during a recent approximately three-year period at the New Orleans Charity Hospital. I am afraid I undertook the study with the somewhat uncharitable thought that I should find operation unwarranted in most of them. I should have known better. Except for a small number of cases in which pelvic examination was omitted (or if performed was not recorded) there were not more than three or four cases in which it would be fair to make even such a comment as that the surgeon's zeal outran his discretion. Twenty-five surgeons, most of whom were responsible for only one or two cases each, performed the 60 operations. The majority of them were residents in training, but some of them were chiefs of service, and exceedingly few of either group need any apologia for their performance.

Since these 60 cases do not represent the total number of such operations performed during the period covered by them, it would be futile to attempt any comparisons with the total number of cases of pelvic disease treated at Charity Hospital during this time. Very illuminating, however, are certain comparisons between this small series and certain cases in a series of 5,208 surgical cases of acute appendicitis which I have studied cumulatively at the New Orleans Charity Hospital over a recent eleven and a quarter year period.

Most striking of all the comparisons is the zero mortality in the 60 unnecessary emergencies, as compared with three deaths in 46 cases in the larger series of appendectomies in which operation was postponed for varying intervals on a mistaken diagnosis of pelvic inflammatory disease. During the period covered by the latter series there also occurred in Charity Hospital seven deaths from acute appendicitis in which operation had not been performed at all because the same mistaken diagnosis had been made.

Twenty-three of the 60 women were white, and their ages ranged from 17 to 42 years. The 37 negro women ranged in age from 14 to 32 years, all but eight being under 25 years of age. The age incidence

is what might be expected and is not helpful in diagnosis, for the period of late adolescence and early adult life is the period of greatest frequency of both acute appendicitis and pelvic inflammatory disease.

The history, or even the demonstration, of pelvic disease is, of course, no justification for assuming that the patient does not also have acute appendicitis. In both races in this small series the pelvic findings were frequently at variance with the facts of the history, though, as is the general experience at Charity Hospital, white women were more inclined deliberately to falsify their histories than negro women. Fifteen women had had recurrent acute attacks, about half of which were acknowledged to have been caused by pus tubes and some of which were apparently much more severe than the current acute attacks. In the majority of cases the history of the acute attack was relatively brief, being under 48 hours in about half of the cases, and in fully half it duplicated the classical picture of acute appendicitis. Two white and 10 negro women had syphilis, which is of significance only because both varieties of venereal disease are so frequently observed in the same subject.

Right-sided pain was the first symptom in 33 of the 60 cases. The statement is frequently made that if pain occurs first in the right side, the disease is not acute appendicitis, but this belief is a fallacy, and a dangerous one at that. Right-sided pain was the first symptom in 192 of the 5,208 cases of acute appendicitis previously referred to, and in this small group there were 25 fatalities.

Bilateral pain is undoubtedly more typical of pelvic inflammatory disease than of acute appendicitis, and it was present either initially or before operation in the majority of the 60 cases. But it was also present in 15 of the acute appendicitis cases studied, in eight of which death occurred.

Pain rousing the patient from sleep is typical of acute appendicitis, and it occurred in 483 cases of the appendicitis series. But it also occurred in six of the 60 cases of pelvic disease. Extension of

pain to the leg is typical of acute appendicitis, and it was observed in 259 cases in that series. But it was also observed in 10 of the 60 patients with pelvic disease, many of whom assumed the jack-knife position so likely to be assumed by patients with acute appendicitis. The coincidence of the onset of pain with the onset of the menstrual period is supposed to be typical of pelvic disease, and was observed in six of the 60 cases. But the same coincidence was observed in 42 cases of acute appendicitis, three of which terminated fatally.

In three of the 60 cases of pelvic disease the taking of a purgative preceded or perhaps precipitated the development of pain, but this sequence by no means excludes acute appendicitis. There were 42 such cases, five of which were fatal, among the 5,208 cases of acute appendicitis. Three white and seven negro women with pelvic disease took purgatives before they were admitted to the hospital, and this fact, combined with the suspicion of acute appendicitis, furnished a double justification for exploratory laparotomy in these special cases.

Urinary symptoms, chiefly dysuria, nocturia and frequency, were elicited in 21 of the 60 unnecessary emergencies, and there is no doubt that the syndrome is typical of acute pelvic disease. But it is by no means infrequent in acute appendicitis. It was present in 187 of the 5,208 cases, in 21 of which death occurred.

Chills, which were present in six of the 60 cases, are more typical of pelvic inflammatory disease than of acute appendicitis, but they were also observed in 188 of the acute appendicitis cases, in 18 of which death occurred. Fainting is not supposed to be characteristic of either condition, but it occurred in two cases of pelvic inflammatory disease and in nine of the acute appendicitis cases, one of which was fatal.

When one discusses temperature elevations and leukocytosis the propriety of dogmatic statements becomes even more questionable than when one is discussing symptoms. The temperature in pelvic in-

flammatory disease is usually stated to be higher than in acute appendicitis, but it was below 101° F. in 50 of the 60 cases when the patients were first seen. The leukocytosis in pelvic inflammatory disease is usually stated to be higher than in acute appendicitis, but it was below 15,000 per cu. mm. in 42 of the 60 cases. On the other hand, in the 5,208 cases of acute appendicitis, in which every type of appendiceal pathology was represented, the temperature range was from 96 to 105° F. and the leukocytosis ranged from 2,000 to 75,000 per cu. mm.

The sedimentation rate has been suggested as a means of differentiating acute appendicitis from pelvic inflammatory disease, the idea being that it is more rapid in the latter condition. Whatever the gynecologist may feel about it, I am not impressed with the reliability of this diagnostic criterion. Collins' detailed studies bear me out. Salpingitis was successfully distinguished from appendicitis in 96.3 per cent of his cases of the simple acute disease, but there was an error of almost 25 per cent in his cases of acute appendicitis with peritonitis, and the results in this group, had he based his therapy on this diagnostic criterion, might easily have been disastrous. The sedimentation rate, furthermore, is not always helpful per se. In the 60 cases under discussion it ranged from 14 minutes to four hours, though *acute* pelvic disease was demonstrated at operation in every single case.

My own feeling, after a careful study of these 60 cases of pelvic disease, plus the study of a large number of cases of acute appendicitis in which pelvic disease was also a possibility, is that, in the absence of backache, which did not appear in a single case in this series, the differential diagnosis may be impossible without exploratory laparotomy. I am not rash enough to state flatly that a patient with acute appendicitis never complains of backache, but I think it reasonably conservative to say that in its absence I should make the diagnosis of pelvic inflammatory disease with a great deal of hesitation.

In 31 of the 60 cases the diagnosis included no other possibility but acute appendicitis. In the remaining cases the diagnosis was pelvic inflammatory disease versus appendicitis in 10, appendicitis versus pelvic inflammatory disease in 17, and ectopic pregnancy versus appendicitis in two. In three instances the gynecologic staff was called in consultation and stated either that the condition was appendicitis or that appendicitis could not positively be excluded. In six instances the surgeons committed themselves as to the state of the appendix, asserting that it was gangrenous, ruptured or abscessed, and in another instance the statement was made that the organ was gangrenous and would probably rupture within the next few hours. I frankly question the possibility of such exactness of diagnosis in the average case and am inclined to regard a high percentage of accuracy as due more to luck than to diagnostic acumen.

When the abdomen was opened, which in some instances followed periods of observation ranging from three to 30 hours, the pathology present varied from simple acute salpingitis to tuboovarian abscess, which in one instance had ruptured. In 22 cases the pathology was limited to the right side and in 17 there was free fluid, usually purulent, in the pelvic cavity.

In all but three cases the abdomen was closed after appendectomy had been performed, supplemented, in 17 cases, by the placing of sulfanilamide in the pelvic cavity. In these three cases pelvic surgery was performed. In most cases recovery was smooth and prompt, though in one case, in which the affected tube and ovary were removed, convalescence was stormy and the patient was critically ill for two weeks.

DIAGNOSTIC CONSIDERATIONS

The 60 operations which have just been analyzed were all unnecessary emergencies. All but a negligible number of them, on the other hand, represented justifiable errors because the operations were based on diagnostic principles, adherence to which furnishes the only possible means of reducing

the mortality of acute appendicitis. These principles may be summarized as follows:

1. Acute appendicitis, because it is the commonest of all surgical diseases, must always be considered as a possibility in any patient with acute abdominal pain.

2. There are no circumstances of age, race, social station or environment in which acute appendicitis may not occur.

3. There is no disease, including pelvic inflammatory disease, with which acute appendicitis may not coincide.

4. Acute appendicitis is atypical in from 25 to 50 per cent of all cases, and may be initiated by or associated with almost any conceivable symptom or sign, regardless of how bizarre or unrelated it may seem.

5. Although observation is undoubtedly warranted in certain cases in which the diagnosis is not immediately clear, it should cover a strictly limited period, in my opinion not more than six hours, during which the physician should see the patient at two-hour intervals or oftener.

What all this amounts to is that the physician must make the differential diagnosis of acute appendicitis versus pelvic inflammatory disease—or versus any other condition, for that matter—on his evaluation of the findings in the special case against the background of his knowledge and experience of appendiceal disease. The symptomatology and physical findings are frequently overlapping and confusing. Temperature and leukocytosis cannot be relied upon for differentiation. Indeed, as has been pointed out, if backache is absent from the syndrome of pelvic disease, and if the pelvic pathology is limited to the right side, the differential diagnosis is frequently impossible unless the abdomen is opened.

To the charge that by my remarks I have in no way clarified the differential diagnosis of acute appendicitis and pelvic disease I plead guilty, although my own opinion is that I should be more guilty if I had clarified it. My presentation may be confused, but so is the syndrome of acute appendicitis in a quarter to a half of all cases, and it is both incorrect and dangerously misleading to discuss it as if it were

not. The essential syndrome of acute appendicitis is not the so-called classical triad of pain, nausea and vomiting, and right-sided tenderness and rigidity. The essential syndrome is a widely variable syndrome, a confused and disorderly syndrome, in which almost any symptom and sign may appear in almost any sequence. The physician who fixes his attention upon that picture of acute appendicitis is likely to have a higher percentage of accurate diagnoses and a far smaller mortality than the physician who pins his faith to the less confusing but entirely incorrect concept of the so-called typical picture.

As the majority of these 60 cases illustrate, particularly when they are compared with analogous cases of acute appendicitis in which operation was either deferred or was not done at all, exploratory laparotomy is an entirely justifiable procedure in any given case in which the physician, after proper investigation, cannot say positively that the patient does not have acute appendicitis. In view of the mortality associated with nonsurgical treatment in acute appendicitis, it is justified without undue delay, and it remains justified even if the condition proves not to be acute appendicitis. As many writers have pointed out, there is no other field of medicine in which errors of omission are attended with such a frightful mortality and errors of commission with such slight risks.

In conclusion two warnings, however, are necessary. The first is that the surgeon who has opened the abdomen in error in a case of pelvic disease should remove the appendix, if he can do so without harmful manipulation, but as a rule should attempt no pelvic surgery, since the consensus of gynecologic opinion is that radical surgery during the acute stage is unwise and dangerous. The second and even more important warning is that, regardless of the severity of the pelvic findings, he should identify the appendix and examine it thoroughly, for until that has been done he cannot be certain that it is not also the site

of a primary and potentially fatal pathologic process.

SUMMARY

1. Sixty cases of acute pelvic disease, in which emergency surgery was carried out on the mistaken diagnosis of acute appendicitis, are analyzed from the diagnostic standpoint, in comparison with analogous cases of acute appendicitis occurring in a series of 5,208 surgical cases.

2. The overlapping character of the syndrome of acute appendicitis and of pelvic inflammatory disease is pointed out.

3. The principles of diagnosis and of differential diagnosis in acute appendicitis are outlined.

4. It is concluded, in view of the high mortality which attends failure to operate in acute appendicitis and the minimal risk which attends the opening of the abdomen on a mistaken diagnosis in pelvic inflammatory disease, that exploration is a justifiable procedure in any case in which, after reasonable study and observation, the diagnosis of acute appendicitis cannot positively be excluded.

HYPERTENSION

THE ROLE OF RENIN AND ANGIOTONIN IN MAINTAINING BLOOD PRESSURE

DON C. MUSSEY, M. D.
NEW ORLEANS

Probably one of the most fertile fields for investigation in the past ten years has been the study of hypertension. Interest in this field received enormous impetus by the reassociation of the kidney with hypertension, many years after the kidney was first incriminated by Bright, and relegated to a minor role by subsequent workers. This recent work has been productive of many new and interesting discoveries, not the least of which was the rediscovery of renin, and subsequent isolation of angiotonin. Of necessity any study of these two substances is a study of hypertension, since they are primarily pressor substances, and following is a review of the work done along that line.

At the present time there are two widely accepted concepts of the pathogenesis of hypertension. According to one of these, which may be designated as the monogenetic theory, and which was advocated by Bright and his early followers, the increased peripheral resistance is primarily dependent on renal disease. This concept, once widely accepted, was challenged during the latter part of the last century by numerous writers. The evidence for their contention was as follows: (a) hypertension often exists in the absence of clinical evidence of renal disease; (b) postmortem examination of the kidneys of hypertensive persons frequently reveals only minimal evidence of renal disease; (c) hypertension may develop in the course of certain diseases of the endocrine glands or of the nervous system without evidence of any primary renal disorder. The increase in blood pressure which sometimes sets in with diphtheritic paralysis and disappears with recovery constitutes a rare but pertinent example.

The evidence against the monogenetic (renal) theory, therefore, seemed conclusive and an alternative concept developed. According to this, the polygenetic theory, hypertension was of at least two types: renal, and "essential"—this latter term implying non-renal, cause unknown.

In recent years, attempts have been made to subdivide essential hypertension into a large number of different types. Such a separation, in so far as it has been successful, has tended to cast further doubt on the validity of Bright's monogenetic hypothesis. Any one who bases his conclusion on the available clinical evidence alone must necessarily adopt the polygenetic theory. Such a point of view is, however, much too narrow. It is necessary that one surveys all the evidence—experimental as well as clinical.

About 1930 very little work was being done on hypertension. Those workers who were interested in this problem divided their attention between finding a pressor agent that could cause hypertension in man, and the role played by the nervous system

in the production of hypertension in man. These workers were handicapped at that time in having to confine their experiments to human beings, since there were no available means of experimentally producing hypertension in animals.

The view held by most workers at that time was that hypertension was due to overactivity of the nervous system, and that attempts to lower the blood pressure would result in renal insufficiency. Clinical evidence indicated that essential hypertension is characterized by normal renal function.

Since that time it has definitely been shown that hypertension is not directly caused by overactivity of the nervous system, but the nervous system does play a part by maintaining the body in a state receptive to humoral stimuli which are known to elevate the arterial pressure.

Further work has shown that lowering the blood pressure in hypertensive patients produces no renal insufficiency, but on the contrary it has been shown that although early in the course of the disease the kidneys may show no change, as the disease progresses hemodynamic changes of great importance occur.

Search for pressor substances in that day was limited to search for a relatively simple compound, such as acetylcholine, since all known pressor and depressor substances were simple compounds of the group of phenolic amines. These were sought for in the blood and urine of hypertensives, but without success.

Tigerstedt and Bergmann had described in 1898 a pressor substance of renal origin to which they gave the name "renin." This substance had apparently been overlooked by most subsequent investigators, since the adherents of the polygenetic theory were decidedly in the majority, and essential hypertension was not associated with the kidney.

In 1932 Chanutin and Ferris successfully produced hypertension in rats by employing their procedure of subtotal nephrectomy. This did not immediately lead to rapid advances because there was no satisfactory method for repeated measurement of the

blood pressure of such small animals. It was the now classical work of Goldblatt and his co-workers, begun in 1928 and published in 1934, which offered for the first time a readily reproducible and feasible method of producing chronic hypertension in the dog, and which indicated the importance of disease of the renal blood vessels as a cause of hypertension. For technical reasons the method of subtotal nephrectomy has not been successful in dogs, and the induction of renal ischemia has yielded unsatisfactory results in rats. Hence, the procedure of Page, wrapping the kidney in silk and production of perinephritis, which yields chronic hypertension in both species, has been of great practical value. This work opened up entirely new fields in the study of hypertension, and stimulated enormous volumes of work on the kidney.

Following the publications of Harrison, Blalock and Mason, and Friedman and Prinzmetal in 1936-37, interest was revived in renin. Rather than a simple phenolic amine this was found to be associated with a protein fraction.

Once so much interesting work had been done on incriminating the kidney in hypertension, Page, et al., in order not to go too far in the wrong direction, set about eliminating the central nervous system as an etiologic agent. To do this they systematically ablated portions of the nervous system of dogs, and observed the effect on the blood pressure. In this way they successfully eliminated the central nervous system.

When this important work was concluded, Helmer and Page turned their attention to renin, and set about separating the pressor and depressor substances. The various purified fractions were tested on perfused rabbits' ears, since they assumed the action of the pressor substance to be peripheral. As the fractions were separated and tested, it was found that the more active the purified renin became in the intact animals, the less effect it had on the perfused ear. Finally a preparation was made that was highly pressor in cats, but caused no vasoconstriction in the perfused

ears. It was found that this was due to the removal of some fraction that was necessary for the pressor action of renin. This fraction was found to be contained in the pseudoglobulin fraction of the blood, and was given the name "renin-activator." It was then shown that the pressor action was not due to the renin, but to the new compound formed by the activation of renin. This new compound was given the name "angiotonin" by Page.

Working separately at the same time, Braun-Menendez and his coworkers in South America grafted kidneys of hypertensive dogs into the necks of normal or nephrectomized dogs. An immediate increase of blood pressure of 30-70 mm. mercury was observed. If normal kidneys were grafted, however, no appreciable change was noted. Following this line they also discovered the pressor substance and gave it the name "hypertensin." They found it to be a stable substance, but rapidly destroyed by tissue extracts. They make the following conclusions about renin: "We assume that renin is an enzyme whose substrate is a blood protein belonging to the pseudoglobulin fraction, the reaction product being hypertensin." They produced hypertensin by incubating blood proteins with renin *in vitro*, and they found that this disappeared if the reaction were allowed to go too far. It was also found to be inactivated by other proteolytic enzymes and by blood.

Once the pressor substance was isolated, many experiments were carried out in order to ascertain its effect on man. Wilkins and Duncan carried out a series of experiments in which angiotonin was injected or infused in normal subjects. They observed an arterial pressure rise after the intravenous injection or infusion of the substance, the systolic pressure rising higher than the diastolic, leading to an increased pulse pressure. Bradycardia was produced, but could be prevented by the injection of atropine. This also increased the elevation of arterial pressure. The venous pressure also rose, but more slowly.

The respiration rate was increased, with

a corresponding decrease of vital capacity.

The rectal temperature was not altered, but the skin temperature was reduced, even producing pallor in some of the subjects. In others, local blanching appeared upon injection, but not as much as produced by the injection of 1:1000 epinephrine.

Blood flow in the limbs decreased moderately, in many cases, after an initial rise, followed finally by a return to the control level. This effect was probably the result of sympathetic vasomotor activity. The same action was observed here as obtains in essential hypertension.

No change was observed in the spinal fluid pressure, although there were occasional mild symptoms of dizziness, substeral oppression, palpitation, nausea or headache during angiotonin hypertension.

Cardiac output was found to be decreased, and arm-to-carotid sinus circulation time was increased.

The electrocardiogram showed no change other than the bradycardia. The x-ray showed a definite increase in cardiac size, and in some there was increased prominence of the pulmonary markings. The kymograph showed increased pulsations.

Interesting are the signs of "myocardial failure," produced by angiotonin hypertension in otherwise normal individuals. These are the increased venous pressure, decreased vital capacity, increased cardiac size, decreased cardiac output, and increased circulation time. Wilkins and Duncan attempt to explain this as a "toxic" action on the myocardium, but this is not substantiated by Lorber, who found that angiotonin had tonic action on the isolated mammalian heart.

In analyzing the mechanism of the hypertension produced by angiotonin, it appears that the peripheral vasoconstriction must be on the side of the arterioles, since the primary rise in arterial pressure precedes the rise of venous pressure.

Except for the rise in venous pressure and the decrease in cardiac output, the circulatory effects of angiotonin, though definite when compared with the control measurements of the same subject, usually are

not so great as to be clearly abnormal. Hence the increase in venous pressure, and decrease in cardiac output can be said to be the outstanding characteristics of the angiotonin hypertension.

Essential hypertension is not entirely similar to angiotonin hypertension, however, due to absence of elevation of the venous pressure. Decreased cardiac output, however, is commonly found in essential hypertension, and to about the same degree as that produced by angiotonin. Failure to observe a rise in venous pressure in essential hypertension may be due to a compensatory mechanism, or it may be due to the fact that no control level is known in these cases.

It has been observed that the hypertension associated with acute hemorrhagic nephritis is similar to the hypertension produced by angiotonin. This might be expected, since in acute hemorrhagic nephritis the cardiovascular system has not had time to compensate for the sudden increase in arterial pressure.

The bradycardia observed after injection of angiotonin is probably vagal, since atropine eliminates this effect. The fact that atropine enhances the action of angiotonin in the production of hypertension indicates that the bradycardia is an important moderator mechanism, as is also the initial infusion of angiotonin.

The effects of the angiotonin subside within four to ten minutes after cessation of administration, whether by single injection or by continuous infusion.

Since hypertensive individuals do not have pale cold skin, peripheral constriction is of a type that raises the arterial pressure to the observed level, without decreasing the flow to the tissues. According to Page, angiotonin produces the same kind of vasoconstriction as found in essential hypertension, a view that is not held by Wilkins and Duncan. Page found no reduction in skin temperature after injection of angiotonin. Further to substantiate his view he observed the action of angiotonin on arterioles viewed through a moat chamber, and then compared them with views of

the same area after chronic hypertension had been induced in the animal. The appearances in both circumstances were identical.

In order to study the action of angiotonin on the heart itself without the many interfering factors encountered in work on the intact animal, Lorber perfused isolated cat hearts with Ringer-Locke solution by the Langendorff method. He introduced various solutions of renin and angiotonin into the perfusion fluid and observed the results. He found that renin had no effect, since there was no activator present upon which to act. When angiotonin was introduced, however, there was a marked reduction in coronary flow, followed often by a late rise. The former was undiminished by subsequent injections, but the latter effect became progressively less. The amplitude of the beat was increased, this change following that in the coronary flow, and often outlasting it. There was a slight slowing of the heart rate noted at the time of decrease in coronary flow.

Injection of angiotonin was followed by a fall in diastolic volume which came on promptly and lasted from five minutes to over an hour. The work increased from 5 to 305 per cent within a few minutes of the administration of angiotonin, and remained elevated from several minutes to over an hour. Oxygen utilization attained supernormal levels, whereas diastolic volume still remained below the control volume. In spite of this, there was noted an increase in efficiency paralleling the work increase.

Hill and Andrus found no abnormalities in the electrocardiogram of anesthetized cats after injection of renin or angiotonin, until the arterial pressure became 190 or above, at which point various types of cardiac arrhythmias appeared. This was prevented, or if it had already occurred, normal rhythm was reestablished by the injection of atropine, again incriminating the vagus nerve. Their experiments indicated that the "pressor" effects of renal pressor substances include direct stimulation of the myocardium, and augmentation of ventric-

ular beat. Unless these actions lead to excessive decrease in diastolic volume of the ventricles, the cardiac output will be increased. Since the pressure of fluid in an elastic container depends upon the quantity of fluid in relation to the capacity of the container, hypertension is either diminished capacity due to vasoconstriction or increased volume. Therefore increased cardiac output is equivalent to increased volume, and there is increased arterial pressure without commensurate vasoconstriction.

Early in hypertension there is a characteristic change in the flow of blood through excretory renal tissue. Ability to concentrate is early impaired, even before urea clearance is lowered. This change in circulation results in decreased blood flow and increased head of pressure within the glomerular capillaries, apparently due to constriction of both afferent and efferent arterioles, the latter greater than the former, since the former decreases, while the latter increases intraglomerular pressure. This keeps the rate of blood flow through the capillaries within normal limits.

These conclusions are based upon the plasma clearance of diodrast and inulin in persons with hypertension.

In hypertensive patients there is a relatively normal filtration rate, but in many there is a tendency to reduced renal blood flow. This indicates increased pressure head in the glomerular capillaries—yielding more water from less blood volume. This is characteristic of hypertensive individuals, and according to Page and his co-workers is reproduced by the hypertension resulting from injection of angiotonin.

Page demonstrated the liberation of renin into the renal vein in increased amounts by the kidneys of dogs, made hypertensive by cellophane or silk perinephritis, and by clamping the renal artery. He found that most of it disappears by the time the blood has reached the femoral artery. This indicates the presence of a renin-inhibitor in the blood. Renin-activator is decreased in the blood from the renal vein and is increased in hypertensive animals when the

femoral artery is reached. Angiotonin-activator is not greatly decreased in blood from the renal vein, but may be increased in the blood in the femoral artery in hypertensive animals. Early in the course of malignant hypertension large amounts of renin are liberated by the kidneys. Later both angiotonin-activator, and renin-activator are greatly reduced or sufficient inhibition is produced to abolish the reaction between them and angiotonin or renin.

Heparinized plasma derived from blood of some patients with essential hypertension causes greater renin-activation than does normal human blood. Plasma from dogs with experimental hypertension also exhibits this heightened power compared with plasma of normal dogs. This suggests that the humoral mechanism in the two types of hypertension have much in common and that the hypertensive either has increased amounts of renin-activator in the blood of decreased amounts of renin-inhibitor, or both.

Once the action of renin and angiotonin was fairly well established experimentally, certain workers set about investigating the mode of action. Holz found that renal cortical extracts of different species were able to transform l-histidine, l-tyrosine, and l-dopa (dihydroxyphenylalanine) into their corresponding amines. These amines have definite pressor effect on the arterial pressure of test cats.

Bing and Zucker perfused the isolated kidney of a cat, *in vitro*, with blood containing dopa. They injected the perfusate into a test cat, and noted a rise of 120 mm. mercury. Presumably the pressor substance was hydroxytyramine, and the amount produced was found to vary inversely with the rate of blood flow through the kidney.

Assuming that renin was the enzyme responsible for the transformation of dopa to a pressor substance, the two were tested by incubating them together. No reaction was found to take place. The human kidney, therefore, contains an enzyme other than renin that is a dopa decarboxylase. Studies on experimental animals show that the decarboxylating enzymes contained in

the kidneys are specific for certain amino acids, and vary with the species.

Hydroxytyramine may be destroyed enzymatically by one of two processes: deamination of its side chain, or oxidation of its nucleus (this possesses a phenolic character). Holz and Bing favor the former, and postulate an amine oxydase.

An amine-oxidase enzyme has been found present in large quantities in the liver of certain cephalopodes (Croxatto and Croxatto), and a concentrated extract has been prepared from the liver of the squid. If angiotonin is incubated with this extract it loses its vasoconstrictor action, and may even become vasodilator.

A purified extract of the mushroom containing a tyrosinase also inactivates angiotonin after a short incubation.

The above findings tend to confuse the picture somewhat, and show that although renin may be an enzyme, this has not been shown, and there is at least one other mechanism for producing a pressor substance in the kidney. The fact that angiotonin can be inactivated by an amine-oxydase, however, suggests a therapeutic test as a mode of investigation of kidney pressor substances.

According to Holtz, decarboxylation, and not deamination of certain amino acids occurs in the ischemic kidney, leading to the formation of pressor amines. As the most powerful pressor amines are phenola, tyrosinase was used in an attempt to inactivate these substances. When injected into hypertensive rats and dogs, tyrosinase was found to lower the arterial pressure. The tests were carried to hypertensive humans, and 20 patients were injected with tyrosinase (Schroeder et al). In one there was little effect, in three the arterial pressure fell slightly, in the remainder the disease was temporarily definitely altered. There were changes in arterial pressure level, regression of hemorrhagic and exudative lesions in ocular fundi, diminution in heart size (x-ray), diminution in level of urea nitrogen, without change in urea clearance (nine cases), increased urea clearance (six cases), disappearance of symptoms—

headache, palpitation, dyspnea, orthopnea, edema. In nine persons the electrocardiograms were altered in the direction of normal. In four cases there were allergic reactions, developing at the site of injection. When the injections were stopped, the blood pressure soon returned to the previous level in three to seven days.

Because this enzyme is specific for phenolic compounds it is believed that a phenolic substance common to some hypertensive states is altered. It is not yet known that this phenol is the pressor substance, but the fact that the pressor action of angiotonin is directly inactivated by tyrosinase suggests that hypothesis.

CONCLUSIONS

There is no valid evidence that renin and angiotonin play any definite role in maintaining normal blood pressure. It may be interesting to speculate that the kidney, becoming ischemic after a fall in blood pressure, pours renin into the blood stream, thus producing a rise in arterial pressure equivalent to the original drop, but there is no clinical or experimental evidence to support this speculation. The evidence, on the contrary, indicates that in the normal individual renin that is produced by the kidney and secreted into the renal vein is almost completely inactivated by the time it reaches the femoral vein. This shows that in the normal individual there is an increase in renin-inactivator, and angiotonin-inactivator, and a decrease in renin activator.

In a hypertensive individual, on the other hand, there is an increase in renin-activator and a decrease in renin- and angiotonin-inactivator, giving rise to an increased reaction to the pressor effects of renin and angiotonin. This starts a deadly cycle in which kidney damage gives rise to the production of renin, which in turn increases the blood pressure, which produces more kidney damage.

It may be stated, therefore, that available evidence indicates renin and angiotonin play a relatively unimportant role in the maintenance of normal blood pressure,

but may play a considerable part in the maintenance of blood pressure at hypertensive levels.

SUMMARY

1. An extract can be obtained from the kidney (renin) which acts as an enzyme on a substrate associated with the pseudo-globulin fraction of the blood (renin-activator) to produce a pressor substance, angiotonin.

2. Angiotonin produces arterial hypertension that simulates essential hypertension.

3. Angiotonin acts by producing peripheral vasoconstriction and by increasing the cardiac output, both of which increase the blood pressure.

4. Angiotonin is quickly inactivated in normal individuals, but in hypertensives it remains active in the circulation for longer periods.

5. Angiotonin is experimentally inactivated by an injection of tyrosinase, and the latter injected in hypertensives brings about improvement of signs and symptoms of hypertension.

6. Renin and angiotonin do not appear to have any role in the maintenance of normal blood pressure, but seem to play some part in maintaining hypertension.

BIBLIOGRAPHY

Bing, R. J., and Zuker, M. B.: Formation of pressor amines in the kidney, *Proc. Soc. Exper. Biol. & Med.*, 46:343, 1941.

Bradley, S. E., and Parker, B.: The hemodynamic effects of angiotonin on the completely isolated mammalian heart, *Am. Heart J.*, 23:37, 1942.

Braun-Menendez, E., Fasciolo, J. C., Leloir, L. F., and Munoz, J. M.: The substance causing renal hypertension, *J. Physiol.*, 98:283, 1940.

Corcoran, A. C., and Page, I. H.: The effects of angiotonin on renal blood flow and glomerular filtration, *Am. J. Physiol.*, 130:335, 1940.

Croxatto, H., and Croxatto, R.: Inhibitory action of amine-oxidase and tyrosinase upon the vasoconstrictor effect of hypertension, *Proc. Soc. Exper. Biol. & Med.*, 48:392, 1941.

Goldblatt, H., Lynch, J., Hanzal, R. F., and Summerville, W. W.: Studies on experimental hypertension; production of persistent elevation of systolic blood pressure by means of renal ischemia, *J. Exper. Med.*, 59:347, 1934.

Grollman, A., Williams, J. R. Jr., and Harrison, T. R.: Effects of renal extract on hypertension, *Bull. New York Acad. Med.*, 18:190, 1942.

Hill, W. H. P., and Andrus, E. C.: The cardiac factor in the "pressor" effects of renin and angiotonin, *J. Exper. Med.*, 74:91, 1941.

House, R. M., and Wakerlin, G. E.: Possible role of the kidney in regulation of normal blood pressure in the dog, *Proc. Soc. Exper. Biol. & Med.*, 48:513, 1941.

Lorber, V.: The action of angiotonin on the completely isolated mammalian heart, *Am. Heart J.*, 23:37, 42.

Page, I. H.: Studies of mechanism of arterial hypertension, *J.A.M.A.*, 120:757, 1942.

Page, I. H.: Difference in the activating effect of normal and hypertensive plasma on intestinal segments treated with renin, *Am. J. Physiol.*, 130:29, 1940.

Page, I. H.: Demonstration of the liberation of renin into the blood stream from kidneys of animals made hypertensive by cellophane perinephritis, *Am. J. of Physiol.*, 130:22, 1940.

Page, I. H., and Helmer, O. M.: Angiotonin-activator, renin and Angiotonin-inhibitor, and the mechanism of tachyphylaxis in normal, hypertensive, and nephrectomized animals, *J. Exper. Med.*, 71:495, 1940.

Page, I. H., and Helmer, O. M.: A crystalline pressor substance, angiotonin, resulting from the reaction between renin and renin activator, *Proc. Cent. Soc. Clin. Res.*, 12:17, 1939.

Schroeder, H. A., Adams, M. H., and Cohn, A. E.: The effects of tyrosinase on arterial hypertension, *J. Clin. Invest.*, 20:442, 1941.

Wilkins, R. W., and Duncan, C. N.: The nature of the arterial hypertension produced in normal subjects by the administration of angiotonin, *J. Clin. Invest.*, 20:721, 1941.

—0—

PORTAL CIRRHOSIS WITH REFERENCE TO RECENT THERAPY

EDWIN W. EDWARDS, M. D.
NEW ORLEANS

INTRODUCTION

One of the reasons that cirrhosis of the liver is poorly understood by the physician is the difficulty he encounters in attempting to solve the puzzle of nomenclature. There is atrophic cirrhosis and hypertrophic cirrhosis, portal cirrhosis and biliary cirrhosis, Laennec's cirrhosis and Hanot's cirrhosis, multilobular cirrhosis and monolobular cirrhosis. To most people many of these names have little significance. These terms are directed at the terminal stage of the disease rather than at its beginning and at the portion of the liver essentially affected. It seems to me that the great majority of cases can be subdivided into biliary and portal cirrhosis. In the former the primary change is in the portal tracts and is concerned with the bile ducts; the latter is essentially an affection of the hepatic cells. This paper is directed at portal cirrhosis.

ETIOLOGY

The etiology of portal cirrhosis is unknown. It may be said with little reservation that there is no one cause. It is the result of parenchymatous injury followed by repair and therefore may be caused by

many hepatotoxins, such as alcohol, bacterial toxins, drugs, foreign proteins, and anesthetics. Because of the multiplicity of agents and the inconsistency of one of these producing cirrhosis, some other common factor was searched for. In recent years the thought has been advanced that an abnormality of the diet may be this common denominator. This will be further discussed under therapy.

PATHOGENESIS

The initial lesion begins as a progressively destructive process involving individual hepatic cells. There are fatty degeneration, necrosis, and atrophy. Then the hepatic lobules are destroyed wholly or in part. This process is followed by regeneration of the hepatic cells to form new lobules and by invasion of the lobules by connective tissue arising from the portal spaces. This usually goes on to fibrosis, lobulation, and production of portal hypertension. The fate of the disease, it can then be surmised on animal experimentation evidence, depends upon the rate of destruction and the rate of repair and replacement by normal hepatic cells. Further animal studies have shown quite clearly two points of further importance: (1) It appears to be relatively difficult to induce destruction of hepatic cells except in a liver which is abnormally constituted because of a dietary deficiency or to prevent a liver from regenerating itself on a proper diet. (2) A liver may show definitely marked cirrhotic changes, but once it has regenerated completely, it may be functionally normal and capable of continuing good health in the animal. Thus one is able to conclude that cirrhosis of the liver is not dependent alone upon some hepatotoxic substance, but also upon the state of the liver at the time this toxin is acting.

PATHOLOGY

The description of the gross pathology as written by Laennec in 1826 can still not be bettered and I shall quote it. "The liver reduced to a third of its ordinary size was, so to say, hidden in the region it occupied, its external surface, lightly mammillated and wrinkled, showed a grayish yellow tint;

indented, it seemed entirely composed of a multitude of small grains, round or oval in form, the size of which varied from that of a millet seed to that of a hemp seed. These grains, easy to separate one from the other, showed between them no place in which one could still distinguish any amount of liver tissue itself. Their color was fawn or a yellowish russet, bordering on greenish; their tissue rather moist, opaque, was flabby to the touch rather than soft, and on pressing the grains between the fingers one could not mash but a small portion; the rest gave to the touch the sensation of a piece of soft leather.

Microscopically there is a combination of atrophy of liver cells and increase in the fibrous tissue. Boyd's *Pathology of Internal Diseases* says "It would appear that the process is a continuous one, extending over months or years, liver cells being continually destroyed and continually replaced by regeneration of the remaining cells." The necrotic liver cells may be found anywhere, but are characteristically centrally located around the central vein of the lobule. This is sometimes actually hard to be certain of because of the distortion of the lobule as a result of continual destruction and regeneration. This process affects the stroma as well as the parenchyme and as a result there is, in the early stages, a fibroblastic proliferation and a marked increase in the fibrous tissues. In time this fibrous tissue contracts resulting in the hepatic tissue becoming dense and sclerotic explaining the usual gross findings of atrophy.

INCIDENCE

Since cirrhosis occurs in all races, it seems more likely that environmental rather than constitutional factors determine the differences in race incidence.

There are numerous case reports of cirrhosis of the liver occurring in families, but these are for most part in children. Ratnoff and Patek, in a series of 386 patients, found only one instance of two cases in one family, a boy aged 12 years and a girl aged 11 years. Among the adult patients none

gave a positive history. This finding is in accord with other large series.

Chuosteks and others have described the typical patient as having a long torso and either a female distribution of body hair or a relative lack of body hair. Other investigators have not been able to confirm this finding very consistently.

Portal cirrhosis occurs in males about twice as often in females. Ratnoff and Patek found 267 males and 119 females in their series. In most nationalities the ratio in favor of men is two or three to one except in Italian and Greek races where it is five or six to one. This higher incidence in males is attributed to their higher incidence of alcoholism. Of the 16,692 persons certified to have died of alcoholism in the United States between 1934 and 1939, 87.9 per cent were males.

Characteristically this is a disease of middle life, but it may occur at any age. In one large series 84 per cent had their first symptom between the ages of 35 and 64 years; 66 per cent between 40 and 59 years. The peak incidence occurred five years earlier in the females than in the males. In countries where life expectancy is shorter the greatest age incidence falls earlier than in the United States.

It is interesting to note that liquor and food handlers are quite prone to develop portal cirrhosis. There is also a high incidence in laborers. There are isolated cases where exposure to certain toxic agents in some occupations has lead to portal cirrhosis.

SYMPTOMS

Symptoms at the onset of this disease are many and varied. The onset is usually very insidious and in some cases there are no symptoms until the liver has decompensated. In the series of cases reviewed by Ratnoff and Patek the most common first symptom was insidious swelling of the abdomen which occurred in more than 25 per cent of the patients. Sudden hematemesis or painful hemorrhoids may usher in the complaints. Abdominal pain generalized or localized to the epigastrium or right upper quadrant was the earliest manifestation in

12 per cent of their series. Other specific primary symptoms are swelling of the lower extremities, jaundice, nausea and vomiting, weakness, abdominal distress.

As the disease progresses many symptoms may develop. Hemorrhagic phenomena, such as epistaxis, purpura, melena, bleeding gums, menorrhagia, metrorrhagia, and petechiae occur.

The symptoms referable to the gastrointestinal tract are very prominent. These consist of anorexia, loss of weight (this may be masked by edema and ascites), nausea and vomiting, excessive eructation, diarrhea or constipation, and flatulence. It is easy to see that these symptoms are not at all specific. At some time during the course of the disease there may be upper abdominal pain.

There are few cardio-respiratory symptoms and most of these are due to respiratory infections to which patients with cirrhosis are susceptible. After the onset of ascites there may be some dyspnea and a few patients complain of a persistent cough.

The urinary symptoms are not consistent with some patients having frequency of urination and nocturia and other patients complaining of oliguria (this is especially so when ascites is present).

One of the commonest symptoms of cirrhosis in women who have not reached the menopause is a disturbance in the menstrual cycle—oligomenorrhea, amenorrhea, metrorrhagia. In males impotency is often present and a few cases relate a loss of hair especially in reference to male distribution.

PHYSICAL SIGNS

Reproduced below is a table of physical signs as found in 386 patients by Ratnoff and Patek:

Physical Sign	Per cent of cases
Ascites	78.0
Palpable liver	75.4
Jaundice	65.3
Edema	61.1
Palpable spleen	44.0
Hemorrhoids	27.2
Fever without apparent cause	24.5
Dilated veins	23.6
Telangiectasia	17.4
Spider angiomata	15.0

Peripheral neuritis	10.4
Varicose veins	9.6
Hyporeflexia	8.3
Absent deep reflexes.....	7.5
Hydrothorax	6.5
Scanty body hair.....	6.5
Pigmentation over shins	5.7
Clubbed fingers or curved finger nails	5.4

Others not included in the chart are cyanosis, umbilical hernia, "liver palms," inguinal hernia, hyperactive deep reflexes, generalized pigmentation, clay colored stools, toxic delirium, tremor, hyperesthesia, and caput medusa.

Almost anyone can recognize the picture presented in the terminal stages of portal cirrhosis. The patient is then bed-ridden, apathetic, dull, emaciated, and has a muddy pallor to his skin. There is marked abdominal distention, edema, and external evidences of collateral circulation. With closer scrutiny one observes hyperpnea, cyanosis, pulsating telangiectasia on the face and chest, half dried blood in the nostrils and mouth. Such a picture is quite pitiful and nearly completely hopeless. The detailed account of signs and symptoms has been gone into in an attempt to encourage earlier diagnosis upon which improved therapy depends.

LABORATORY DATA

Liver function tests in the past have been unsatisfactory because they have not been fully understood. No one test seems to satisfy all the requirements at the present time. No one functional test is of absolute diagnostic value and all of them are of a contributory nature. One should realize that each test only judges one function. Too much reliance should not be placed upon any one test and long continued clinical judgment is at present of much more value. Those tests of most value at present are the dye test, bilirubin test, hippuric acid test, and the cephalin-cholesterol flocculation test.

A macrocytic, hyperchromic anemia is often found in advanced cases of cirrhosis of the liver. There may also be a thrombocytopenia. Changes in the serum albumin and serum globulin ratio have been recog-

nized for years. There is characteristically a drop in the serum albumin level. One will usually find an elevation in the icterus index in some stage of the disease before death. There is a prolongation of the clotting time and of the prothrombin time. By the x-ray, one, in some cases, is able to demonstrate the presence of esophageal varices.

RELATIONSHIP OF CLINICAL AND LABORATORY MANIFESTATIONS TO PATHOLOGY

There are few diseases in which one is able so completely to correlate the clinical and laboratory findings to those present at autopsy. I think that one will have a better appreciation of this disease with an understanding of this correlation and briefly it will be discussed in this section.

Portal Obstruction: Portal obstruction is the commonest manifestation of cirrhosis of the liver. The effects of this obstruction are seen in all parts of the body drained by the portal vein, and by its two components, the superior mesenteric and splenic veins. There is congestion of the entire gastrointestinal tract with digestive disturbances, anorexia, nausea, and vomiting. Ascites is produced as the result of transudation through the walls of the mesenteric veins. The spleen is enlarged, owing in part, to back pressure in the splenic vein. In order to counteract the effect of the obstruction a collateral circulation is established which may be efficient enough to carry along the patient for a considerable time. Unfortunately there is a tendency to distention and the development of varicosities at the points where the portal communicates with the systemic circulation. One of these points is at the lower end of the esophagus where the left coronary vein of the stomach and the esophageal veins communicate with the azyga vein. These varicosities may rupture into the esophagus and give rise to hemorrhage, a common and occasionally a fatal symptom. Anastomosis between the inferior mesenteric and hemorrhoidal veins may become varicose, with the production of hemorrhoids. Of special interest are the veins passing along the round ligaments and establishing a communica-

tion between the epigastric veins of the abdominal wall and the veins at the hilus of the liver. Varicose dilatation of these veins gives rise to the caput medusae, the ring of dilated veins surrounding the umbilicus.

The destruction of the parenchyme and the contraction of the fibrous tissue is followed by a gradual obliteration of the small radicles of the vascular bed. The inevitable result is an extreme degree of portal obstruction with its resulting ascites and hemorrhage.

Biliary Obstruction: This is evidenced by jaundice which usually is a late accompaniment and may be due to fibrotic constriction of the bile radicles. The other explanation is deficiency of liver function due to hepatic degeneration. Also is forthcoming the explanation of clay-colored stools.

Splenic Enlargement: This is in part due to congestion as explained above and is in part due to a pulp hyperplasia secondary to the same factor responsible for the cirrhosis.

Hepatic Insufficiency: Many physicians claim that there is ample liver function because so often the liver function tests give such disappointingly normal values. Again one is reminded to remember that these tests only gauge one function to the test. The diminution of the serum albumin-globulin ratio is generally accepted to be due to the fact that the liver is not able to synthesize albumin as before. Post and Patek, and Butt, Snell and Key, have shown that the decrease in serum albumin rather than the portal hypertension is responsible for the formation of ascites and its concomitant oliguria. The explanation is a reduction in osmotic pressure. As has been eluded to previously, hepatic dysfunction may in some way be responsible for the jaundice.

The macrocytic, hyperchromic anemia sometimes found in cirrhosis of the liver is due to the lack of the liver's ability to store and utilize the anti-anemic principle.

There has been some evidence lately to show that liver plays a part in the metabolism of vitamins A, D and K. As a result

of poor liver function there is a decrease in prothrombin and fibrinogen formation and therefore purpura and hemorrhagic tendencies. One may also explain this as lack of vitamin K absorption when the bile ducts are obstructed.

It is not the object of this discussion to become involved in the theory of the application of liver damage, but rather to stimulate one to speculate upon it.

THERAPY

The basis for the changing conceptions in the treatment of cirrhosis of the liver is based on several clinical and experimental observations. Those of a clinical nature are: (1) The high incidence of cirrhosis in countries where nutritional deficiencies are endemic; (2) coincidence of enteric diseases with cirrhosis and with deficiency states and, (3) incidence of alcoholism and cirrhosis and alcoholism and nutritional deficiencies. The experimental ones are: (1) Starvation renders the liver more vulnerable to injury by hepatotoxins; (2) the lack of certain food factors in yeast are said to cause fatty changes in the liver and impair its function; (3) one may produce cirrhosis in rats and rabbits by diets deficient in yeast; (4) high fat or excess cystine diet leads to fibrotic liver changes and, (5) the liver is protected from hepatotoxins by a high protein diet and/or feedings of yeast. Therefore it has been concluded that there is a significant relationship between nutritional deficiencies and development of cirrhosis. There are some objections to this hypothesis and their support is derived from: (1) The incidence of cirrhosis of the liver with deficiency diseases is not necessarily high. Arguments against this are quick death in fatal beriberi, pellagra or sprue with a high autopsy evidence of degeneration, also a high percentage of deficiency diseases show physical signs or laboratory evidence of liver disease. (2) The nutritional state may be the result of interference with nutrition by liver disease. This occurs, but rather to perpetuate already present deficiencies as is evidenced by many histories.

Because of the probable nutritional origin of cirrhosis and because of the associated secondary deficiency in cirrhosis there has been a gradual change in the therapy. In the past, treatment has been devoted principally to the elimination of ascites by mercurial diuretics, fluid restriction, purgation and paracenteses. At present the usual therapeutic regimen consists of a high protein (mainly from vegetable and dairy sources), high carbohydrate, low fat, and high vitamin diet (with added vitamin supplements). The significance of each of these factors will be discussed.

Protein: Ravdin observed that the critical amount of protein required to prevent fatty infiltration of the liver was 17 per cent of the total calories, provided the caloric intake was sufficient to meet energy requirements. If it falls below this level, fatty infiltration occurs despite the level of carbohydrate intake. It has also been shown conclusively experimentally that a fatty liver is much more vulnerable to hepatotoxins and this is thought to be due to the fact that so many of the hepatotoxins are lipid soluble. In protein deficiency states liver protein is the first body protein to be used. Therefore Ravdin has recommended that at least 25 per cent of the total calories be of protein origin. Whipple, et al., showed on dogs that cystine and methionine, two sulfur containing amino acids, were specific protein protective in chloroform damage to the liver. They could not demonstrate this with any other single or combinations of sulfur containing amino acids. They have hypothesized that these substances are able to conjugate with toxic substances and also to form detoxicating products. Also it is possible that these two sulfur containing amino acids furnish the sulfhydryl groups essential for the construction of liver enzymes, glutathione, thiamine hydrochloride, and certain protein hormones and they are therefore important in body economy. The serum proteins are synthesized by the liver and it is the resulting imbalance of them, as a result of the hepatic damage, that is responsible with portal hypertension for

ascites. It is necessary that an adequate supply of essential amino acids be provided for this purpose. In order for many of these above functions to take place liver cells must be regenerated and this can only take place in the presence of an adequate protein intake—mainly from vegetable and dairy origin.

Carbohydrates: "A high carbohydrate intake is important because carbohydrate spares liver protein, displaces liver fat, and makes ready energy available for liver metabolism." One must realize that glucose itself does not protect the liver from hepatotoxins, but rather indirectly it does by sparing liver protein. It has also been shown that certain end-products of carbohydrate metabolism are able to join with the nitrogenous end-products of tissue metabolism and thus resynthesize amino acid and rebuild body proteins. This is an additional protein-sparing action. The glycogen and protein stores of the liver are reduced and the fat content increased in starvation and undernutrition. In liver disease 70 to 80 per cent of the total calories should come from easily assimilable carbohydrates.

Fats: In experimental animals it has been shown that when the fatty acid content of the liver reached 25 per cent, death invariably occurred from chloroform anesthesia and the microscopic liver sections showed extensive central necrosis. The fatty acids of the liver are more unsaturated than the fatty acids of other parts of the body and absorb many dangerous hepatotoxins which are fat soluble. This is the first step in the pathogenesis of fatty infiltration, necrosis, and fibrosis. As has been discussed above, fatty infiltration can be prevented by high vitamin, high protein diet. Therefore in conditions of inadequate diet the fat content of the diet should be at a minimum. In serious liver disease the fat intake should not exceed 5 per cent of the total caloric intake. In mild or less serious liver damage it may be as high as 50 grams per day. The fat should be derived chiefly from milk, egg white, calf liver, cottage cheese, dairy products, fowl, and white fleshed fish.

Vitamins: Numerous workers, Patek, Butt, Hamilton, Rich, Gyorgy, Goldblatt and others have shown parenchymatous changes similar to cirrhosis of the liver in experimental animals fed a diet deficient in the vitamin B complex. They were able to prevent these changes by the use of whole yeast in the diet, but not entirely with the known factors except for choline. It has been concluded that it is the result of some unknown factor in this complex. With this in mind there followed clinical experimentation with abundant administration of the B complex in patients with decompensated portal cirrhosis with otherwise adequate diets. Patek noted improvement in 10 out of 13 patients so treated in the form of a rise in serum albumin. Vitamin C should also be added to the diet for it promotes healing and repair and a decreased vitamin C level predisposes to a decreased sugar tolerance.

Summary: The therapeutic objectives are twofold: (1) To determine the cause and eradicate it, and (2) to prevent or arrest hepatic disease by decreasing the liver's underability and to facilitate functional activities, repair, and regeneration. These aims are to keep glycogen, protein, and fat content of liver within normal limits. It has been shown that a fatty liver is susceptible to hepatotoxins and their production of necrosis and cirrhosis. There are certain conditions which predispose to fatty livers such as fasting or undernutrition, low protein diet, low choline diet, high fat diet, high cholesterol diet, and disturbed pancreatic digestion (causing poor protein absorption). It has been shown that a high carbohydrate, relatively high protein, low fat diet with large supplements of vitamin B complex protects the liver and aids repair. Evidence is that it is best to use protein of vegetable or dairy product origin and to use those proteins rich in cystine and methionine. The carbohydrates best to use are those which are easily assimilated such as jellies, honey, marmalades, fruit juices with sugar and 15 to 20 per cent vegetables.

The continuance of a dietic regimen such as this is by no means simple. It can easily

become monotonous, expensive, and impractical. At times it may require meticulous care and careful nursing. Improvement is slow. Patek has set the time for signs of improvement to appear between two months and ten months. These signs of improvement include a lessening of the jaundice, a decrease in peripheral edema, disappearance of fever, and an increase in urinary output. Laboratory indications of improvement are a rise in hemoglobin, a decrease in prothrombin clotting time, and a decrease in the completeness of flocculation in the cephalin-cholesterol test. Patience, optimism, and persistence are necessary both for the physician and the patient.

Another drawback to the therapy, though not actually its fault, is the lack of early diagnosis which is so imperative for complete cure. For this reason the physicians should devote more attention to mild digestive disturbances, slight loss of weight, icteric pallor, and a palpable liver and spleen. Snell advises, in cases of doubt, to perform a peritoneoscopy and a hepatic biopsy to confirm diagnosis. In cases so diagnosed the outlined program of therapy has an excellent chance for producing recovery.

PROGNOSIS

The prognosis is grave in cirrhosis of the liver once signs of decompensation have appeared. After the onset of ascites 32 per cent of Patek's patients lived one year; and after the first hematemesis 28 per cent lived one year.

Early diagnosis and the institution of the above discussed therapy improves the prognosis markedly as was also shown by Ratnoff and Patek. In their series at the end of the first year 67 per cent of the treated patients were alive and 35 per cent of the control cases; at the end of the second year 45 per cent of the treated patients were alive and 21 per cent of the untreated.

SUMMARY

A clinical discussion of portal cirrhosis in regard to etiology, pathogenesis, pathology, incidence, clinical manifestations,

laboratory signs, and therapy has been offered.

The hypothesis that cirrhosis of the liver may result from dietary and vitamin deficiency is supported by clinical and experimental evidence.

The modern therapy of high carbohydrate, relatively high protein, low fat diet with vitamin supplements, especially vitamin B complex, offers much encouragement as manifested by signs of clinical improvement and the lengthening of the life span.

BIBLIOGRAPHY

Best, C. H., and Taylor, N. B.: *Physiological Basis of Medical Practice*, The Williams and Wilkins Company, Baltimore, 1939. Pp. 761-763.

Boyce, F. F.: *The Role of the Liver In Surgery*, Charles C. Thomas, Baltimore, 1941. Pp. 98-132.

Boyd, William: *The Pathology of Internal Diseases*, Lea and Febiger, Philadelphia, 1936. Pp. 326-340.

Butt, H. R., and Snell, A. M.: Recent trends in treatment of cirrhosis of the liver, *Proc. Staff. Met. Mayo Clinic*, 17:250, 1942.

Butt, H. R., Snell, A. M., and Key, Ansel: Plasma protein in hepatic disease, *Arch. Int. Med.*, 63:143, 1939.

Fleming, R. G., and Snell, A. M.: Portal cirrhosis with ascites. An analysis of two hundred cases with special reference to prognosis and treatment, *Am. J. Digest Dis.*, 9:115, 1942.

Greene, Carl H.: Liver and biliary tract—a review for 1941, *Arch. Int. Med.*, 69:691, 1942.

Gyorgy, Paul, and Goldblatt, Harry: Hepatic injury on a nutritional basis in rats, *J. Exper. Med.*, 70:185, 1939.

Hanger, F. N., and Patek, A. J.: The cephalin flocculation test in cirrhosis of the liver, *Ac. J. Med. Sci.*, 202:48, 1941.

Ivy, A. C.: The rationale of therapy in hepatic disease, *Quart. Bull. Northwestern Univ. Med. School*, 16:1, 1942.

Mann, F. C.: Liver and cedical progress, *J. A. M. A.*, 117:1577, 1942.

Miller, L. L., Ross, J. F., and Whipple, G. H.: Methionine and cystine, specific protein factors preventing chloroform liver injury in protein-depleted dogs, *Am. J. Med. Sci.*, 200:739, 1940.

Miller, L. L., and Whipple, G. H.: Chloroform injury increases as protein stores decrease, *Am. J. Med. Sci.*, 199:204, 1940.

Patek, A. J., and Post, Joseph: Treatment of cirrhosis of the liver by a nutritious diet and supplements rich in vitamin B complex, *J. Clin. Invest.*, 20:481, 1941.

Portis, S. A.: *Diseases of the Digestive System*, Lea and Febiger, Philadelphia, 1941. Pp. 118-126 and 621-658.

Post, Joseph, and Patek, A. J.: Serum proteins in cirrhosis of liver. I. Relation to prognosis and to formation of ascites, *Arch. Int. Med.*, 69:67, 1942.

Post, Joseph, and Patek, A. J.: Serum proteins in cirrhosis of liver. II. Nitrogen balance studies on five patients, *Arch. Int. Med.*, 69:83, 1942.

Ratnoff, Oscar D., and Patek, A. J.: The natural history of Laennec's cirrhosis of the liver, *Medicine*, 21:207, 1942.

Ravdin, I. S.: The protection of the liver from injury, *Surgery*, 8:204, 1940.

Rich, A. R., and Hamilton, J. D.: The experimental production of cirrhosis of the liver by means of a deficient diet, *Bull. Johns Hopkins Hosp.*, 66:185, 1940.

Rosenberg, D. H.: Cephalin-cholesterol flocculation test in cases of disease of the liver, *Arch. Surg.*, 43:231, 1941.

Snell, Albert M.: Recent advances in the treatment of hepatic disease, *Minnesota Med.*, 23:551, 1940.

Snell, Albert M.: Changing conceptions of portal cirrhosis, *Pennsylvania M. J.*, 45:337, 1942.

Schmid, C. F.: Mortality from alcoholism in the United States, *Quart. J. Studies on Alcohol*, 1:432, 1940.

Wilen, C. J. W.: Treatment of portal cirrhosis, *Bull. Tulane Med. Faculty*, 1:65, 1942.

TUBERCULOSIS AND PREGNANCY*

EDGAR HULL, M. D.†
NEW ORLEANS

It has been stated that 32,000 pregnancies occur annually in this country in women with tuberculosis¹. This dramatic figure may give the impression that tuberculosis occurs with extraordinary frequency in pregnancy, but it is meaningless unless it is compared with the total number of pregnancies which occur annually. Eisele and Mason² examined 4,000 pregnant women fluoroscopically, and found evidence of tuberculosis in 1.06 per cent, and evidence of active disease in 0.7 per cent. The incidence of clinical tuberculosis in other reported series^{3, 4, 5} is lower, varying from 0 to 0.36 per cent. It thus appears that tuberculosis is hardly more frequent in pregnant women than in other young adults.

It has been noted that the onset of tuberculosis frequently dates from pregnancy or the puerperium. However, Jameson⁶, in a study of 451 married women with tuberculosis, found that the first symptoms appeared during pregnancy in only 3.5 per cent, and dated from the puerperium in only 4.8 per cent, which suggests that the chronologic association was due only to chance. There is thus no evidence that pregnancy predisposes to the development of tuberculosis.

It is well known that women may die of tuberculosis shortly after the termination of pregnancy or even during pregnancy. Mortality statistics, however, show that one out of every five deaths in women of child-bearing age is due to tuberculosis⁷, and that

*Read before the Orleans Parish Medical Society, May 24, 1943.

†From the Department of Medicine of the Louisiana State University School of Medicine and the John Dibert Tuberculosis Service of the Charity Hospital of Louisiana at New Orleans.

one out ten⁷ is due to complications of pregnancy. Since tuberculosis has no effect upon fecundity it is quite clear that if a young married woman with tuberculosis is to die there is a distinct chance that she will die during or shortly after a pregnancy, of tuberculosis or of a complication of the pregnancy, irrespective of any effect of the pregnancy upon her tuberculous process.

No well informed physicians now believe that pregnancy exerts a beneficial effect upon tuberculous lesions. It is now known that the gain in weight is an accompaniment of the pregnancy and does not necessarily mirror changes in the pulmonary process, and that upward displacement of the diaphragm does not diminish its motility⁸.

There are still many, however, who believe that pregnancy influences tuberculosis unfavorably, among them Potter¹, Carrington⁹, and Allen¹⁰. Some of them seem to believe that therapeutic abortion results in improvement of the tuberculous process. The opinions of these men are expressed without statistical backing, and apparently are derived from theoretical considerations (which Ornstein and Epstein¹¹ have shown to be invalid) and from isolated clinical experiences. As long ago as 1926 the studies of Bridgman and Norwood¹² cast considerable doubt upon the value of therapeutic abortion in pulmonary tuberculosis, and led to a change of Dr. J. Whittdrege Williams¹³ previously radical views upon this matter.

The weight of evidence now at hand regarding the influence of pregnancy upon tuberculosis points toward the opinion expressed in a recent statement by Ornstein¹⁴:

"(1) Pregnancy has no influence upon the course of tuberculosis.

"(2) The prognosis depends upon the character and control of the tuberculous process."

This opinion must be reached by all who study reports regarding tuberculosis in women of childbearing age which compare the course and mortality, over a period of years, in women who have had babies after tuberculosis was discovered, with the same data regarding women who have had no babies.

Among earlier reports are those of Forssner¹⁵ and Barnes and Barnes¹⁶; the more recent include those of Ornstein and Kovnat¹⁷, Ornstein and Epstein¹¹, and Mariette, Larson, and Litzenberg¹⁸. Ornstein and Kovnat report comparative mortalities of 36 and 33 per cent, and Mariette et al. report a mortality of 19 per cent in 82 tuberculous women who had had babies against 39 per cent among 873 tuberculous women in the same age group who had no babies over a 19 year period. Ornstein and Epstein reported a 12 per cent mortality in 82 women who were given adequate collapse therapy and whose pregnancies were allowed to continue. Mariette et al. pointed out that all deaths in the women who had babies occurred in patients with far advanced disease at the time treatment was begun, and Ornstein and Kovnat noted that all deaths, both in women who did and who did not have babies, occurred in the caseating open cavity type of tuberculosis. These authors are of the opinion that tuberculosis is never an indication for the interruption of pregnancy, and Douglas¹⁹ and Henske²⁰ are in agreement with them.

In the sixth edition of his textbook, published in 1933, DeLee²¹ wrote: "Most obstetricians think pregnancy aggravates the disease and internists disagree among themselves." In the eighth edition, published in 1943²² he writes: "If the patient with active tuberculosis becomes pregnant, abortion is not indicated. Proper care will enable the patient to go through her pregnancy unharmed." The second sentence of this statement is a bit on the rosy side, but reflects modern obstetrical opinion that pregnancy does not influence the tuberculous process.

PREGNANCY AND TUBERCULOSIS IN THE L. S. U.
UNIT OF THE DIBERT (WHITE)
TUBERCULOSIS SERVICE

During the nine year existence of the L. S. U. Unit, no pregnancies have been interrupted in patients with tuberculosis. If pregnancy existed at the time of admission, attention was directed to control of the tuberculous process, and prenatal care was supervised by the department of obstetrics. Patients discharged as quiescent or arrested

cases were advised to forego pregnancy, but if pregnancy nevertheless occurred it was allowed to continue, and care of the patient became the responsibility both of the tuberculosis and obstetrical clinics. When it was possible, these patients were readmitted to the hospital before the expected date of delivery, their babies delivered in the hospital, and the patients kept in bed for two months following delivery. The method of delivery was determined by obstetrical indications.

Stage of Disease: During the nine year period there were 29 women who had babies after the date of their first admission for active tuberculosis, and whom we have been able to follow. According to the criteria of the National Tuberculosis Association, three (10 per cent) of these women had minimal tuberculosis; 12 (41 per cent) had moderately advanced disease, seven unilateral, five bilateral; and in 14 (48 per cent) the disease was far advanced, seven unilateral, seven bilateral. Comparison with the statistics compiled from this service by Monte and Blitz²³ in 1938 indicates that this group represents a more favorable group than that represented by all female patients admitted to the service, in which the percentages of minimal, moderately advanced, and far advanced cases were, respectively, about 2, 45 and 53 per cent.

Treatment: Of the definitely minimal cases, two were treated by bed rest alone, and one received unilateral pneumothorax. All 12 of the patients with moderately advanced disease received pneumothorax; in one case the pneumothorax was bilateral. Of the 14 patients with far advanced disease, five were treated by bed rest alone, seven by pneumothorax, and two by thoracoplasty. Thirty-six babies have been born to these patients, of whom 34 are now living. One baby was stillborn, and another, a twin born prematurely, lived only a few days.

One of the mothers has died; she had far advanced bilateral disease, and was pregnant when admitted. Collapse therapy was not employed. The baby was born alive and is now living and healthy. The mother died a few months after the birth of her baby.

The mortality for the entire group to this date is thus 4 per cent.

Pregnancy with Active Tuberculosis: Only four of all the patients were pregnant on admission, and the single death of the series occurred in this subgroup. Of the other three, two patients had far advanced disease, and collapse therapy was not employed. In these patients the disease is arrested at present. The fourth patient had moderately advanced unilateral disease, was given pneumothorax, and delivered twins prematurely, one of whom died. She has since had another baby, and now is apparently cured. There are thus five living babies resulting from the pregnancies of these four women.

Pregnancy after Treatment for Tuberculosis: Twenty-five patients became pregnant after they had been given treatment for tuberculosis, and in all of them the disease was considered to be quiescent or arrested when their pregnancies began. Twenty-three of them have had one pregnancy, one has had three, and one has had four. One of the babies was stillborn, but the rest have survived. There are thus 29 surviving babies who have been born to these 25 women. All of the mothers are now living, and in all of them the disease is quiescent, arrested, or apparently cured. Flareups of the tuberculous process, necessitating readmission, have occurred in four cases, but only in one did flareup occur within six months after delivery. Flareup within this period is still possible for four of the patients, since less than six months have elapsed since the termination of their last pregnancy.

DISCUSSION

This study then may be said to have begun with 29 women who had active tuberculosis. It seems to end with one dead woman, two dead babies, 28 presumably healthy women, and 34 healthy children, a total of 63 presumably healthy persons. Actually, of course, it has not ended. Some of the women will eventually die of tuberculosis, and some of them will have more children. It is a small study, and as yet short-

ranged, for eleven of these women have had their last baby within the past two years. It is also an incomplete study, for we have not been able to follow nearly all the women of childbearing age who have been discharged from the Dibert service. We have hearsay evidence that about ten more of these women have had babies, and that one of these had died. The study cannot be said to furnish additional evidence regarding the influence of pregnancy upon active tuberculosis, but it does suggest strongly that pregnancy is not harmful to women who have received adequate treatment for tuberculosis.

CONCLUSIONS

On the basis of evidence which has accumulated during the past 20 years, it may be stated that pregnancy has no influence upon the development or course of tuberculosis. Our own experience, which reveals a to-date mortality of 4 per cent among 29 tuberculous women who have borne children, is in accord with this statement.

REFERENCES

1. Potter, M. G.: Pulmonary complications during pregnancy, *J. A. M. A.* 145: 522-523, Aug. 17, 1940.
2. Eisele, C. W., and Mason, E. W.: Unsuspected tuberculosis in pregnant women as revealed by routine roentgenologic examinations, *Amer. J. Obs. and Gyn.* 36:387-392, Sept. 1938.
3. Tisdall, L. H.: Pulmonary tuberculosis in active obstetric service, with analysis of 15 cases, *Amer. J. Obs. and Gyn.* 36:472-476, Sept. 1938.
4. Tamis, A., and Clahr, J. Quoted by Eisele and Mason, reference (2).
5. Tucker, B. E. Quoted by Eisele and Mason, reference (2).
6. Jameson, E. M.: Pregnancy and tuberculosis: A study of end results, *Amer. J. Obs. and Gyn.* 36:59-66, July 1938.
7. Maternal Mortality in Philadelphia, 1931-1933-1934. Philadelphia County Med. Soc.
8. McGinty, A. P.: Comparative effects of pregnancy and phrenic nerve interruption on diaphragm and their relation to pulmonary tuberculosis, *Amer. J. Obs. and Gyn.* 35:237-248, Feb. 1938.
9. Carrington, W. J.: Pregnancy and tuberculosis with reference to contraceptive advice and therapeutic abortion, *J. Med. Soc. New Jersey*, 37:602, 1940.
10. Allen, E. P.: Type of delivery of tuberculous woman, *Nat'l Tb. Assoc. Trans.*, 37:174, 1941.
11. Ornstein, G. C., and Epstein, I. G.: Studies on influence of pregnancy on pulmonary tuberculosis, *Quart. Bull. Sea View Hosp.*, 4:420, July 1939.
12. Bridgman, E. W., and Norwood, V.: Pulmonary tuberculosis and pregnancy, *Bull. Johns Hopkins Hosp.*, 38:83, 1926.
13. Williams, J. W.: *Obstetrics*, 6th ed. D. Appleton Century Co., New York, 1931.
14. Ornstein, G.: Care of tuberculous woman following delivery, *Nat'l Tb. Assoc. Trans.*, 35:176, 1941.
15. Forssner, H.: Les relations entre l'état de gestation et la tuberculose, *Acta gynec. Scandinav.*, 3:256, 1925.
16. Barnes, H. L., and Barnes, L. R. P.: Pregnancy and tuberculosis, *Amer. J. Obs. and Gyn.*, 19:400-499, Apr. 1930.
17. Ornstein, G. C., and Kovnat, M.: Influence of pregnancy on pulmonary tuberculosis, *Am. Rev. Tb.*, 31:224, 1935.
18. Mariette, E. S., Larson, L. M., and Litzenberg, J. C.: Treatment of tuberculous woman during pregnancy, *Am. J. Med. Sci.*, 203:866, 1942.
19. Douglas, B. R.: Panel Discussion on Tuberculosis, 25th Annual Clinical Session, American College of Physicians, Boston, 1941.
20. Henske, A. C.: Tuberculosis complicating pregnancy; treatment: report of cases, *J. Missouri Med. Assoc.*, 35:430, 1938.
21. DeLee, J. B.: *Textbook of Obstetrics*, 6th ed. W. B. Saunders Co., Philadelphia, 1933.
22. DeLee, J. B., and Greenhill, J. B.: *Textbook of Obstetrics*, 8th ed. W. B. Saunders Co., Philadelphia, 1943.
23. Monte, L. A., and Blitz, O.: Factors delaying the diagnosis of pulmonary tuberculosis, *New Orleans M. & S. J.*, 90:468, 1938.

WARS AND WOMEN DOCTORS

ELIZABETH BASS, M. D.
NEW ORLEANS

From the mythological Greek Amazons to the present-day guerillas of Russia, Spain, and Yugoslavia, "female warriors" have fought with unsurpassed courage and often with relentless fury. Minerva was not only a medical goddess but also a warrior. No less brave have been the women who nursed the wounded on battlefields, for the task of women in both ancient and modern warfare has been to bind wounds and to alleviate pain. Joan of Arc, Queen Eleanor of Aquitaine, Mary Anne Talbot of Flinders, Hannah Snell of Guise's regiment, Deborah Sampson of Revolutionary war fame and Sergeant Mollie Pitcher, Russia's "Battalion of Death," the American nurses on Bataan, and other heroine "soldiers" and nurses have their niche in military history.

Warfare no longer is strictly a man's business. Woman's effort is essential in the conflict now waging; her part is recognized and valued. With transition and necessity has come about a victory for American women physicians. On April 16, 1943, the last barrier of prejudice tumbled when President Roosevelt signed the bill providing for the appointment of female physicians and surgeons in the Medical Reserve Corps of the Army and Navy and "for according them rank, commensurate with their professional qualifications."

A few women did attain rank in old-world armies but of their lives and services only vague and scattered accounts are preserved. Many royal women were proficient in medical studies, founded great hospitals, and personally cared for the sick. During the Crusades noble women and abbesses organized medical care for the pilgrims on the road to Jerusalem. The noted medical writer, Anna Comnena was physician-in-chief of the great Pantocrator Hospital at Constantinople which had been built by her father the emperor, Alexius I. Comnenos. Her sister-in-law, Queen Bertha of Greece, also constructed a hospital at Constantinople during the later Crusades and in each of its sections was engaged a medical woman. Records of this period are fragmentary and the names of medical women have been lost. However there is note of Edina Rittle who served with the staff of the Pantocrator Hospital.

It is said that Isabella the Catholic (1451-1504) was the first to "introduce the benevolent institution of camp hospitals." During the war to expel the Moors from Spain, this liberal-minded queen had four large tent hospitals constructed and women doctors were among the physicians serving in these hospitals. The daughter of Hans der Wolff of Frankfurt (1344) was a noted surgeon and received medals for her care and treatment of wounded soldiers. Marie Elizabeth Sauer of Poland was taught to be assistant to her father, a surgeon in the army of Frederick the Great. Brief mention is found of a "Mrs. Allyn who served as an army surgeon during King Philip's war and at one time was given twenty pounds for her services."

More is known of Lady Anne Halkett (1622-1699) of Scotland who was a surgeon in the Royal Army. Of Lady Halkett, the historian Dr. Kate Hurd-Mead writes: "At Perth in 1650, after the battle of Dunbar, the King in person and with some ceremony thanked her. The whole story of her life . . . is decidedly thrilling, for she had many adventures and some love episodes, besides, incidentally, writing twenty one books on religious subjects . . . Her father died while

Anne was still a child and her mother attended to her education but where she got her medical skill she does not say . . . Her autobiography describes her daily life at Fyvie for five years during which time she was tending the sick and wounded men in the army, women dying of cancer, men dying insane, and children dying of fevers." Once Lady Halkett was a prisoner at New-castle and even there was called upon to attend the sick and to perform many operations. It is said that patients came from far parts so great was her medical skill.

The next figure is that of an amazing woman who became Inspector General of all British Hospitals. She was "Dr. James Barry" who died in 1865 when her sex was revealed. Her identity is still a mystery. Hart's Army List shows that "James Barry, M. D." entered military service the year after graduating from the University of Edinburgh, and in 1815 was made assistant surgeon. In 1857 she became Inspector General of the Military Hospitals of Canada and finally Inspector General of all British Hospitals. Her neglected grave in Kensal Cemetery shows that this strange character died at the age of seventy-one years. She was retired after forty-six years of service in the British Army.

Dr. Maude Abbott writes: "The mystery surrounding her (Dr. Barry) was no doubt connected with some person of prominence and unknown identity, under whose protection she was . . . for the not infrequent breaches of army discipline into which an impulsive and hot-tempered disposition led her were never permitted to interfere with her promotions in the Army which were made more rapidly than would be customary under ordinary circumstances. On the other hand a signal bravery she is said to have shown upon many occasions was never rewarded by military decorations given to men for similar actions . . . It was thought that an early love affair in which some exalted personage was implicated, led to concealment of her sex with the connivance of certain persons high in authority. She was evidently a well-trained physician with considerable sagacity in her profes-

sion . . . very pretentious and sensitive to ridicule . . . perhaps some of her peculiarities were assumed in order to keep her identity concealed . . . and that the asperity which she showed to subordinates was a necessary part of the role she played."

Public opinion and prejudice were such during the nineteenth century that many women writers used pseudonyms and others found the disguise of men's clothes necessary and more suitable to battlefields than were hoopskirts and petticoats. The unique figure of Dr. Mary Walker is recalled. This independent soul, however, is better remembered for her eccentric garb than for the excellent service she rendered in the Army of the United States. She graduated from Syracuse University in 1855 and was commissioned Lieutenant and Assistant Surgeon in the Federal Army. Permission was given to her by an act of Congress to wear trousers, and her uniform was of federal blue with gold stripes down the trousers legs. She wore officers overcoat and black felt hat with gold cord. Once Dr. Walker was taken prisoner by the Southern forces and exchanged later as a prisoner of war. Long after the conflict had ended, she campaigned for "Women's Right" and worked for the improvement of medical conditions for soldiers. She received a pension of \$8.50 monthly and lived until 1917 when she was eighty-seven years of age.

The army nurse first appeared with the Crimean War and the woman army doctor had her official debut with the first World War. However before the European conflict several English women doctors saw active service in the war of the Balkan States, 1912-1913. The idea for organized service by women physicians was the inspiration of Dr. Elsie Inglis who founded the Scottish Women's Hospitals and who gave her life to the cause of the Allies during World War I. Through the efforts of this young woman and her associates complete hospital units were financed and equipped. One hospital unit was accepted gratefully by the Serbian Government and later a second unit sailed for France to serve under the French

Red Cross. Twenty-three members, English and Scotch medical women, received the Croix de Guerre for their four years of service with the units stationed at Roy-aumont and Villers Cotterts. The hospitals organized by the Scottish Women's Hospital Committee expanded and units were sent to Serbia, Corsica, Troyes, Calais, Ostrovo, Russia and other places.

At the invitation of the Belgian Croix Rouge and the British Consul-General, a unit of English women had gone to Antwerp and opened a hospital. When this town was bombarded by German seige guns, six medical women and twelve nurses removed their patients to shelter and the following day evacuated the city and made a perilous journey to Ostend. An Expeditionary Force of English women had gone to France in 1914 and was housed in Paris, serving under the French Croix Rouge. During the war and long afterwards when famine and disease struck the devastated areas, English, Scotch and American women volunteers continued their medical relief work.

When the United States entered the World War I there was no provision for the enlistment of women physicians, although the Government had provided for nurses to enlist with armed forces. However, groups of women physicians in various states were organized and even before the United States entered the war, a Woman's Army General Hospital had been financed and made ready. At the first annual meeting of the Medical Women's National Association in 1915, the American Women's Hospitals was organized. The first year of the war over one thousand women doctors registered for service and many of these were certified to the Red Cross for service overseas while fifty-five signed as "contract surgeons" with the army with civilian status. During the Spanish War, Dr. Anita McGee made history when she became the first woman "contract surgeon" with the United States Army.

In July, 1918, when the allied counter-drive began, the first hospital unit of the

American Women's Hospitals sailed for France and was established in the village of Neumoutiers and later at Chateau Luzancy which served as an evacuation hospital for the American forces. This marked the beginning of the American Women's Hospital's humanitarian work which has continued until the present time. After World War I, sixty-two American physicians and nurses were decorated by foreign governments for their services which were carried on during the aftermath of war when there was need for increased medical care. Hospitals were maintained at Vodena, Greek Macedonia and the Serbian border during the war and after the armistice, hospitals, clinics and dispensaries were established in Serbia, Turkey, Armenia, Albania and in the Caucasus.

History has in a way repeated itself. In the fall of 1941, twelve women doctors volunteered to go to England to relieve the medical personnel. Seven of the twelve remained. Major Barbara Stimson joined the R.A.M.C. and became one of three hundred women doctors commissioned in the British Army. Ninety British women doctors are attached to the R.A.F. and some to military hospitals in Britain and abroad.

Canada and Australia accept women into the Medical Corps without distinction and the Russian Army makes no distinction between men and women doctors. Ninety per cent of the doctors now being trained in Russia are women, compared to the normal fifty per cent.

Women doctors, now eligible for commissions in the Medical Reserve Corps of the army forces, have a variety of war services from which they may select. These are: Hospital Service, Hospital Casualty and Evacuation Units in vulnerable areas, private practice in resettlement and defense, industrial medicine, Children's Bureau of the U. S. Department of Labor, U. S. Public Health Service, the armed forces, women appointed for volunteer emergency service, Women's Ferrying Squadron, and the United States Army and Navy.

"The gifts of nature are alike diffused in both, all the pursuits of men are the pursuits of women," so Plato wrote.

BIBLIOGRAPHY

Abbott, Maude: *History of Medicine in The Province of Quebec*, McGill Univ. Montreal, Canada, 1931.

Hurd-Mead, Kate C.: *A History of Women in Medicine*, Haddam Press, 1938.

Lovejoy, Esther Pohl: *Certain Samaritans*, The Macmillan Company, 1933.

NEW ORLEANS Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

C. C. deGravelles, M. D., Ex officio
For one year: Lucien A. LeDoux, M. D., Chairman
H. W. Kostmayer, M. D., Secretary
For two years: James K. Howles, M. D.
For three years: G. C. Anderson, M. D.,
Vice-Chairman
Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D. *Editor-in-Chief*
Willard R. Wirth, M. D. *Editor*
Daniel J. Murphy, M. D. *Associate Editor*

COLLABORATORS—COUNCILORS

Edwin L. Zander, M. D.
J. T. O'Ferrall, M. D.
Guy R. Jones, M. D.
T. B. Tooke, Sr., M. D.
George Wright, M. D.
Rhett McMahon, M. D.
C. A. Martin, M. D.
W. F. Couvillion, M. D.
Paul T. Talbot, M. D. *General Manager*
1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The eighth annual meeting of the New Orleans Graduate Medical Assembly will be held this year March 6-9. This organization has grown by leaps and bounds. More than 400 out of state visitors attended last year's session than had ever attended before. Many of these men were in the armed services and came from all over the United States. Twenty-seven different states as well as the District of Columbia were represented. There was a slight diminution in

the number of local members who attended due to the fact that many of them are in the Army or Navy.

The program this year is fully equal to that of last year and of previous years. A large number of guest speakers of distinction and renown have accepted the invitations to appear on the program of this meeting. They include such men as Dr. Chevalier L. Jackson, a student of bronchoscopy, Dr. Robert L. Levy, Professor of Clinical Medicine at Columbia, Dr. Walter L. Palmer, Professor of Medicine, University of Chicago, Dr. Ralph H. Major, Professor of Medicine at the University of Kansas School of Medicine, Dr. Paul R. Cannon, head of the Department of Pathology at the University of Chicago and Dr. Abraham Myerson, Clinical Professor of Psychiatry at Harvard Medical School. In the field of surgery are to be found such speakers as Commander L. Kraeer Ferguson, Assistant Professor of Surgery at the University of Pennsylvania, Dr. George T. Pack, Assistant Professor of Clinical Surgery at Cornell University. In proctology Dr. Louis A. Buie, Chief of Department of Proctology at the Mayo Clinic will discuss the problems in this particular field. In orthopedic surgery, Dr. H. Winnett Orr, well known for his method of treatment of bone fractures, will give several papers. In obstetrics Dr. John W. Harris, Professor of Obstetrics and Gynecology at the University of Wisconsin Medical School, and Dr. Robert A. Ross, Associate Professor of Obstetrics at Duke University, will have papers on gynecologic and obstetric conditions. Dr. Carroll S. Wright, Professor of Dermatology and Syphilology at Temple University School of Medicine, will represent the specialty of dermatology, and Dr. Frank Hinman, Clinical Professor of Urology at the University of California Medical School will give instructive talks in their particular field of medicine. Altogether the list of speakers is outstanding and to hear them will well repay those who register and attend the meeting.

The members of the New Orleans Graduate Medical Assembly will welcome visitors

and speakers at this annual convocation. It is to be hoped that the attendance will equal that of last year. It is particularly desired that the members of Army and Navy installations in Louisiana and Mississippi, or in fact any nearby state will feel welcome to attend the meeting.

BENJAMIN FRANKLIN

In January of this year will be celebrated the two-hundred and eighty-third birthday of a truly great American, Benjamin Franklin. He is known as an inventor, a scientist, a statesman, a successful business man, a writer, the founder of a great University, a signer of the Declaration of Independence, the maker of an alliance with France and peace with Great Britain, but his activities in medical fields are not generally appreciated. In 1751 he promoted the founding of the Pennsylvania Hospital which remains to this day as one of the great private hospitals in this country. In 1771 Franklin was elected a member of the Royal Medical Society of Paris and in 1787 was made an honorary member of the Medical Society of London. Franklin's friendship with the outstanding medical men of his time is probably not known by many doctors. He corresponded constantly with Dr. Ingenhousz of Vienna, the court physician to Maria Theresa. As a matter of fact this, at that time famous doctor, consulted Franklin in regard to the advisability of inoculating the children of the royal family, Franklin having written about and practiced inoculation against smallpox. Franklin's writings were translated into French by Dr. Dubourg. Fothergill was a close friend of Franklin in the years he spent in London just prior to the Revolution. Franklin knew and advised Bard, founder of Columbia Medical School. Benjamin Rush and Thomas Bond were his intimates. Lettson, in his day the most successful English physician and founder of a General Dispensary in London, wrote a biography of this great man. When the claims of Mesmer were being broadcast widely and being accepted very generally as the truth, Franklin was instrumental in exposing him as a fraud.

Of the quacks who practiced in his time and day, Franklin commented "they are the greatest liars in the world." He was a vigorous proponent of frequent bathing which, two hundred and fifty years ago, was an infrequent practice. He, in so far as we know, was one of the first to advocate sun baths. He was a discoverer of the injurious effects of CO₂ and spoken of as originator of the modern science of ventilation. He preached the gospel of pure air, he kept his windows open at night, whereas his fellow citizens closed and locked theirs.

Franklin did not like tobacco, he thought that the use of tobacco would disappear in a very few years. For once his prognostication proved wrong. He was an advocate of drinking plenty of water and in giving water to febrile patients. His writings on lead poisoning are classic. He stated that this disease was due to the bits of metal which lead workers swallowed when they ate their food because they had not thoroughly washed their hands.

This former Postmaster General of the United States believed colds were transmitted from person to person and that individuals were more likely to develop a cold by overeating and by immoderation of any kind than if they restrained their desires. He wrote that many diseases proceeded from colds, such as pleurisy and fevers, and that the common cold might be aggravated by the overheating of living rooms.

Benjamin Franklin was truly a great man. He was catholic in his interests and eclectic in his ideas. It is doubtful if any American has ever left so profound an impression upon three great nations, England, France and the United States, as did Franklin.

DIAGNOSIS OF CANCER OF THE UTERUS

Last year Papanicolaou and Traut¹ reported upon a method of diagnosis of cancer of the uterus which they had found to be most valuable. So important was this contribution considered, that the studies have been elaborated and reported upon in a publication which has appeared under the aegis

of the Commonwealth Fund. Furthermore, their work has been confirmed by others, as a recent paper by Meigs, Graham, Fremont-Smith, Kapnick and Rawson² attests. These authors studied a large group of patients in the Massachusetts General Hospital and Vincent Memorial Hospital. They found the method to be reliable, simple and capable of being carried out by the man who is in general practice.

The Cornell authors who described this method of diagnosing cancer in early stages have found that cancer of the uterus may be diagnosed by finding of cancer cells in a vaginal smear. This material can be obtained readily for diagnostic purposes, without elaborate technic, but it depends upon a skilled histopathologist to make the diagnosis. The smears can be made by the practitioner and then sent to a diagnostic laboratory. By this method it seems to be quite possible that the practitioner of medicine to make a diagnosis of cancer of the uterus before the signs of the disease are unequivocal. Meigs et al. say that the vaginal smear examination of any female patient who is in the cancer age should be an important part of the routine examination of this woman.

To cure cancer of any of the viscera lying within the body depends upon an early diagnosis. This is a platitude well known to all physicians. The disease has to be discovered early in its life history. The statement has been made repeatedly that in the instance of cancer of the body of the uterus the likelihood of cure decreases 4 per cent a week after its discovery and the figure for cancer of the cervix is 3.3 per cent a week. Only 11 per cent of women with carcinoma of the cervix are operated

upon in the early operable and curable stages of the diseases. Twenty-nine per cent of women with carcinoma of the cervix represent questionable cases which may or may not be curable. Sixty per cent are inoperable when treatment is first begun. Failure to make an early diagnosis is the primary cause of death from cancer of the cervix. Both the patient and the doctor may be blamed for this delay. Statistics show that the woman with cancer of the cervix averages a period of four months after the onset of abnormal bleeding before she reports to her physician and statistics show that a period of four months intervenes finally before operation is performed. Meigs et al. stress the point that "the critical weeks lost by the patient can be salvaged only by slow education of the public." The physician likewise should be definite and dogmatic when possible cancer is present. There should be no delay in sending the patient to the gynecologist-surgeon.

The vaginal smear technic in the diagnosis of cancer through the recognition of cancer cells in the smear is an additional condition which may be diagnosed by this method. Endocrinologists have known for a long while that the mucous membrane of the vagina gives most satisfactory and most valuable information in reference to the administration and continuation of treatment with estrogenic substances.

¹Papanicolaou, G. N., and Traut, H. F.: Demonstration of malignant cells in vaginal smears and its relation to diagnosis of cancer of uterus, New York State M. J., 43:767, 1943.

²Meigs, J. V., Graham, R. M., Fremont-Smith, M., Kapnick, I., and Rawson, R. W.: The value of the vaginal smear in the diagnosis of uterine cancer, Surg. Gynec. & Obstet., 77:449, 1943.

ORGANIZATION SECTION

The Executive Committee dedicates this page to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

The year 1943 has now passed and our profession should begin to take an inventory of our present status and start planning New Year resolutions to carry the

burden of adequate medical care for the future. Most important of these should be an intelligent survey of the problems which are now urgent and produced by the

changes incident to the present war. In this we have no set formula; nothing of experience or precedent to aid or guide our deductions. We can, however, resolve by conscientious thought and research to try to maintain a sane and equitable set-up which might be the means of preserving our American form of medical practice. Grave problems have been solved in the past by the medical profession and it is felt that now is an appropriate time for wisdom and intelligent thought to be displayed in the analysis of present conditions and some formula adopted for their correction. For example, we may by good fighting help to defeat the Wagner-Murray-Dingell Senate Bill 1161. In this regard what are we planning to do to meet the implications of shortage of medical care? Some are of the opinion that with proper adjustment of our present civilian doctors no further rearrangement of medical practice will be necessary. Others feel very strongly that now we should be discussing this important matter and some definite plan should be adopted for a prepayment, voluntary medical service plan, looking toward adequate service to the lower income groups. Such a plan should include support by some form of state medical control, whereby parishes either singly or in groups can have the proper set-up for rendering modern and efficient medical attention. In various states experiments are being conducted with such prepayment plans. Some one of these might be adjustable or suitable to our needs in Louisiana. It is obvious that a single plan for the whole forty-eight states is not possible or feasible. What would be workable in Connecticut would not suit California; industrial business and productive forms of livelihood vary too much. Is it not timely that some thought be given this vital subject? Unless we meet these issues incident to changes in our mode and character of living, molded more or less by the exigencies of war, we must continue to expect some attempt from other groups to take over. This should not prevail.

Medical postwar planning is just as important in our American form of medical

practice as in other professions or business. We read and hear a great deal from the powers existing or created about the need for some realigning of our social fabric to meet the changes which are sure to appear after the termination of hostilities. Should we not be prepared to properly regulate and distribute equitably the needs of the medical profession when our medical men who are now in military service return to take up their civilian work again? We could render a great service to our medical confreres and the public by having a thorough understanding of postwar needs in the field of medical practice. Of course no one can prophesy the time and date when the war will cease but proper thinking for such a time seems most advisable and in keeping with the thought and tempo of the times. Our medical needs should be budgeted by the medical profession and we should not depend upon some lay group to gather statistics and data for some department of the government, who in turn would proceed with the streamlining necessary to meet the implied need. Why not forestall such a condition before it really develops?

You may be interested to learn that the E. M. I. C. (emergency maternal and infant care) plan has finally been approved by the State Board of Health and the Children's Bureau of the U. S. Department of Labor. Every physician in the state has no doubt received a copy of the outline for this service from the Louisiana State Department of Health. The execution of maternity and pediatric service for families of enlisted men is now the function of our profession. The Executive Committee labored long and diligently over this plan. The final plan adopted was the best possible under existing circumstances.

Dr. C. C. deGravelles, our President, and the Secretary, had the privilege of attending the Conference of State Secretaries and Editors held in Chicago on November 20 and 21 at the office of the American Medical Association. There we profited greatly by hearing the above problems discussed

along with other vital matters. It was the general feeling of that group that the position taken by our State Medical Society is very sound and in keeping with the high principles and ethics so often manifested by our profession; thoroughly in keeping with the tenets and obligations to protect the high ideals of our noble calling.

Again, we together visited the meeting of the Eighth District Medical Society in Alexandria on the night of December 6 and the meeting of the Fifth District Society on the night of December 7 in Monroe. These meetings were most encouraging both from the standpoint of attendance and interest displayed in the scientific program and discussion of present day problems of our medical profession.

A most delightful evening was enjoyed by all those attending a supper in Shreveport on the night of December 8 when the Woman's Auxiliary of the Shreveport Medi-

cal Society entertained their husbands. This is a good gesture and might be emulated in other parishes. Certainly the group was most tolerant to permit the trespassing of our entourage.

The executive officers of the State Society are now giving serious consideration to plans for the 1944 annual meeting to be held in New Orleans the latter part of April. Just what can be expected in this regard will be announced later. Some of the members favor a one day business meeting; others think there should be a restricted scientific program. Due consideration is being given to the hardships of travel, time which can be spent away from professional work and to suitable accommodations for those in attendance. As stated above definite information in regard to the meeting will be furnished very shortly.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the month of December the Society held one regular scientific meeting. The program was as follows:

SYMPOSIUM ON TUBERCULOSIS:

- a. The Evolution of Tuberculosis in the Human Lung, by Dr. Chester A. Stewart. Drs. Sydney Jacobs and Julius Lane Wilson opened the discussion on this paper.
- b. The Use of 35 mm. Fluorography in Mass Chest X-Ray Surveys, by Dr. R. Alec Brown. Drs. Julius Lane Wilson and E. C. Samuels, and Lt. Col. Boen Swinny, M. C., United States Army, Armed Forces Induction Station, opened the discussion on this paper.

The Eighteenth Stanford E. Chaille Memorial Oration was given Thursday, December 16. Dr. John R. Schenken, Professor of Pathology, Louisiana State University Medical School, was the guest speaker. Dr. Schenken spoke on The Carcinogenic and Carcinostatic Effects of Estrogenic Substances; A Study of the Changes in the Mammary and Prostate Glands.

At the annual election of the Society held Saturday, December 11, 1943, the following officers of the Orleans Parish Medical Society and delegates to the Louisiana State Medical Society for 1944 were elected:

President-Elect—Dr. A. V. Friedrichs.
 First Vice-President—Dr. Max M. Green.
 Second Vice-President—Dr. Philip H. Jones, Jr.
 Third Vice-President—Dr. Frank Chetta.
 Secretary—Dr. Daniel J. Murphy.
 Treasurer—Dr. Paul G. Lacroix.
 Librarian—Dr. John R. Schenken.
 Additional Members to Board of Directors—Dr. E. Leckert, Dr. E. J. Richard.
 Delegates to the Louisiana State Medical Society—Dr. H. B. Alsobrook, Dr. George C. Battalora, Dr. C. J. Brown, Dr. Donovan C. Browne, Dr. W. R. Buffington, Dr. Frank Chetta, Dr. Wm. B. Clark, Dr. Aynaud F. Hebert, Dr. Philip H. Jones, Jr., Dr. Theo. F. Kirn, Dr. Edwin H. Lawson, Dr. E. L. Leckert, Dr. Daniel J. Murphy, Dr. Jos. P. Palermo, Dr. Felix Planche, Dr. E. J. Richard, Dr. Wm. H. Roeling.

Daniel J. Murphy, M. D.,
 Secretary.

- | | | |
|---------|----|--|
| January | 1. | Board of Directors, Orleans Parish Medical Society, 8 p. m. |
| January | 2. | Eye, Ear, Nose and Throat Staff, 8 p. m. |
| January | 3. | Clinico - pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Mercy Hospital Staff, 8 p. m. |
| January | 4. | Clinico - pathologic Conference, |

	Touro Infirmary, 11:15 a. m. to 12:15 p. m.				Charity Hospital Surgical Staff, 8 p. m.
	Executive Committee, Baptist Hospital, 8 p. m.	January 20.			Clinico - pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
January 10.	Installation Banquet, Jung Hotel Roof Garden, 7 p. m.	January 21.			I. C. C. R. Hospital Staff, 12:30 p. m.
January 12.	Clinico - pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.	January 24.			Scientific Meeting, Orleans Parish Medical Society, 8 p. m.
	Touro Infirmary Staff, 8 p. m.	January 25.			Baptist Hospital Staff, 8 p. m.
	Woman's Auxiliary, Orleans Parish Medical Society, Orleans Club, 3 p. m.	January 26.			Clinico - pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
January 13.	New Orleans Hospital Council.				French Hospital Staff, 8 p. m.
January 17.	Hotel Dieu Staff, 8 p. m.	January 27.			Catholic Physicians' Guild, 8 p. m.
	Clinico - pathologic Conference, Baptist Hospital, 8 p. m.				Clinico - pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
January 18.	Charity Hospital Medical Staff, 8 p. m.	January 28.			DePaul Sanitarium Staff, 8 p. m.
January 19.	Clinico - pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.				L. S. U. Faculty Club, 8 p. m.
					New Orleans Hospital Dispensary for Women and Children Staff, 8 p. m.

LOUISIANA STATE MEDICAL SOCIETY NEWS

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

1944 ANNUAL MEETING

Dr. Daniel J. Murphy has been appointed by the Orleans Parish Medical Society to serve as Chairman of the Committee on Arrangements for the 1944 meeting of the State Society to be held in New Orleans April 24-27. His long contact with the activities of organized medicine and experience gained from service on previous arrangement committees aptly qualify him for this important position. We can be assured that under his leadership we will have a most successful meeting.

Chairmen of the various scientific sections are as follows:

Dr. Maurice Couret—Bacteriology and Pathology.
 Dr. Val H. Fuchs—Eye, Ear, Nose and Throat.
 Dr. Donovan C. Browne—Gastroenterology.
 Dr. Daniel J. Murphy—General Surgery.
 Dr. Joseph W. Reddoch—Gynecology and Obstetrics.
 Dr. J. H. Musser—Medicine and Therapeutics.

Dr. H. Randolph Unsworth—Nervous Diseases.

Dr. J. T. O'Ferrall—Orthopedic Surgery.

Dr. S. George Wolfe—Pediatrics.

Dr. David E. Brown—Public Health and Sanitation.

Dr. Lucien A. Fortier—Radiology.

Dr. Jesse R. Stamper—Urology.

It is suggested that members interested in presenting papers communicate with the chairman of the section on which they wish to appear promptly so that suitable arrangements may be made without further delay.

FOURTH DISTRICT MEDICAL SOCIETY

The following officers have been elected to serve for the coming year:

President, Dr. W. R. Harwell; Vice-President, Dr. W. R. Matthews; Secretary-Treasurer; Delegate, Dr. J. M. Bodenheimer; all of Shreveport.

RED RIVER PARISH MEDICAL SOCIETY

The Red River Parish Medical Society recently elected the following doctors as officers for the year 1944: President, Dr. W. L. Davis; Vice-President, Dr. W. B. Hunter; Secretary-Treasurer, Dr. W. W. Gahagan; Delegate, Dr. L. S. Huckabay; all of Coushatta.

IBERIA PARISH MEDICAL SOCIETY

The meeting for election of officers of the Iberia Parish Medical Society was held in New Iberia on December 8, 1943. The following officers will hold office during the year 1944: President, Dr. Edwin L. Landry, New Iberia; Vice-President, Dr. Lastie M. Villien, Jeanerette; Secretary-Treasurer, Dr. Harold M. Flory, New Iberia; Delegate, Dr. Wilton P. D. Tilly, New Iberia; Alternate, Dr. Harold M. Flory, New Iberia.

POINTE COUPEE PARISH MEDICAL SOCIETY

The following officers have been elected by the Pointe Coupee Parish Medical Society for the year 1944: President, Dr. J. W. Plauche, Jr., Morganza; Vice-President, Dr. J. M. Mosely, New Roads; Secretary-Treasurer, Dr. F. F. Rougon, New Roads; Delegate, Dr. James O. St. Dizier, Walls.

BEAUREGARD PARISH MEDICAL SOCIETY

The following officers have been elected by the Beauregard Parish Medical Society for the year 1944: President, Dr. Luke Marcello; Vice-President, Dr. Sam T. Roberts; Secretary-Treasurer, Dr. Thomas R. Sartor; Delegate, Dr. Luke Marcello; all of DeRidder.

BI-PARISH MEDICAL SOCIETY

The Bi-Parish Medical Society met in the Receiving Station, Angola, Louisiana.

The following officers were elected for 1944:

Dr. M. A. Walker, President.

Dr. E. M. Robards, Vice-President.

Dr. E. M. Toler, Secretary-Treasurer.

Dr. W. E. Wilkinson, Delegate.

Dr. Glenn J. Smith, Alternate Delegate.

Dr. Dan Baker, Angola, was elected Member.

Dr. J. E. Toups, Honorary Member.

The General Manager and the Chaplain of Louisiana State Penitentiary made instructive talks.

Dr. Dan Baker of Angola read an interesting and unusual paper on diaphragmatic hernia.

Dr. J. E. Toups of Baton Rouge read an excellent paper on essential hypertension. Both papers were freely and favorably discussed.

Dr. M. A. Walker presented some of the x-ray pictures and tissues from various operations performed in the hospital. It was quite a revelation to all present what Dr. Walker had accomplished for the health and comfort of the inmates of the institution.

We trust that the next Legislature will appropriate us sufficient amount for the maintenance and further improvement in this hospital.

A vote of thanks was extended to General Manager Mitchner and aids for the splendid dinner given the Society.

The Society adjourned to meet in East Louisiana State Hospital, Jackson, for the first Wednesday in March, 1944, at 7 p. m.

Before repairing to the Receiving Station for a bounteous dinner prepared under the direction of General Manager Mitchner and aids, members and guests toured the State Penitentiary Hospital and extensive farm.

E. M. Toler, M. D.,
Secretary.

Drs. David E. Brown, T. A. Watters, C. C. deGravelles and P. T. Talbot attended a meeting of the Eighth District Medical Society in Alexandria on the night of December 6 and a meeting of the Fifth District Society on the night of December 7 in Monroe. These meetings were most encouraging both from the standpoint of attendance and interest displayed in the scientific program and discussion of present day problems of our medical profession.

WAR MANPOWER COMMISSION

Procurement and Assignment Service for Physicians, Dentists, and Veterinarians

To: State Chairmen for Physicians.

From: Directing Board, Procurement and Assignment Service.

Subject: Approval by State Boards of Licensure of Nine Months' Internship.

The Federation of State Boards of Medical Licensure has communicated with all States requiring the prerequisite of an internship for licensure to practice medicine. Every State and territory approved the nine months' internship for commissioned officers, accepting either general military service or service in a military hospital of three months to make up for entire internship of a year.

A number of States did not approve the nine months' internship for persons ineligible for military service. Therefore, all interns not going into the service should be told to serve an additional period of nine months as a junior resident so that he or she may qualify for the minimum internship requirements of some States. This is a means by which more physically disqualified men may be encouraged to take residencies.

The following letter has been received which is self explanatory. Any Parish Society desiring to avail themselves of any of these films should get in touch with Mr. McLeod:

BRITISH CONSULATE GENERAL

New Orleans 12, La.

November 19, 1943

Louisiana State Medical Society
1430 Tulane Ave.
New Orleans, La.
Gentlemen:

The British Information Services have opened an office here in New Orleans for the distribution of factual films in the British war effort.

Among them are some which would be of great interest to medical groups. Especially, Plastic Surgery in Wartime in technicolor and this is in three reels and runs twenty-seven minutes. It is a lecture film made by the famous plastic surgeon, Sir Harold Gilles. Another film that might be of interest is entitled Malaria, in three reels and runs about thirty minutes.

This office will be glad to cooperate in any way with your association in securing any other films pertaining to your work of which we have twelve on Health and Medical Science.

Very truly yours,

H. S. McLeod,
British Information Services
1238 Canal Building
New Orleans, La.

Operating under an accelerated wartime schedule, the Louisiana State University School of Medicine will close its March-December 1943 school year with Commencement Exercises which will be held at the Municipal Auditorium in New Orleans on December 20, 1943, at 8 p. m. Seventy-seven seniors will receive the degree of Doctor of Medicine at the exercises. Of these, 38 are affiliated with the Army Specialized Training Unit No. 3876, and 30 with the Navy Specialized Training Unit. The remaining, 19, are civilians.

Dr. Reginald Fitz, Assistant to the Dean, Harvard Medical School, Vice-Chairman of the American Board of Internal Medicine, and member of the Council on Medical Education and Hospitals of the American Medical Association, will deliver the Commencement Address.

Following the Commencement Exercises the School of Medicine will recess until the opening of the new school year on January 3, 1944.

The many friends of Dr. and Mrs. Julius W. Daigle of Assumption Parish are pleased to know that on Thanksgiving Day there was born to Mrs. Daigle three boy children.

THE AMERICAN COLLEGE OF SURGEONS INITIATES IN 1943

LOUISIANA

Woodward D. Beacham.....New Orleans
Charles L. Brown.....New Orleans
Ernest Celli.....New Orleans
Harry A. Davis.....New Orleans

Robert P. Hays.....New Orleans
John A. Hendrick.....Shreveport
Robert P. Howell.....Lake Charles
LeRoy J. Kleinsasser.....New Orleans
Maunsel B. Pearce.....Alexandria
J. Ralph Phillips.....Baton Rouge
Lee C. Schlesinger.....New Orleans
E. Perry Thomas.....New Orleans

SOUTHERN SECTION OF AMERICAN FEDERATION FOR CLINICAL RESEARCH

A most successful meeting of the Southern Section of the American Federation for Clinical Research was held at the Charity Hospital on December 3 and 4. Some twenty-six papers were read, not only by local men, Drs. Ashman, Bayley, Burch, D'Antoni, Faust, LaDue, McCoy, Mayerson, Napier, Ochsner, Senekjic and Winsor, but by visitors as far north as Minnesota as well as from Texas, Alabama, Mississippi and nearby states. The meeting concluded with a luncheon and a business meeting.

It is to be hoped that this organization, which is primarily interested in clinical research, will continue to hold as instructive and valuable meetings in the future as the one just concluded.

TOURO INFIRMARY

The regular meeting of the Medical Staff was held Wednesday, December 8 at 8 p. m. The following program was presented: A clinico-pathologic conference with a clinical discussion by Dr. P. D. Russ; case reports on cardiac mechanism disturbances by Dr. M. Gardberg; case reports on plastic surgery of the nose, ear and upper lip by Dr. W. R. Metz.

INFECTIOUS DISEASES IN LOUISIANA

The Louisiana State Board of Health reported that for the week ending November 13 there were reported a few diseases in numbers greater than 10. There were 19 cases of pulmonary tuberculosis listed; there were 15 of malaria, 14 of scarlet fever, 13 of typhus fever, and 11 of influenza. The typhus fever cases were scattered pretty well throughout the state, Orleans Parish reporting seven of them and East Feliciana four. Incidentally, all except one case of malaria came from East Feliciana. The following week there was rather a sharp increase in the number of reportable diseases. In this week there were listed 54 cases of pulmonary tuberculosis, 20 of measles, 15 of influenza, 13 of diphtheria, and 10 of scarlet fever. Three cases of poliomyelitis were listed this week from three different parishes in the state. The typhus fever cases were reported from five parishes, no one of which had more than one case except Calcasieu. The fairly large number of pulmonary tuberculosis cases include 19 reported from

military sources. The week which closed November 27 had recorded 19 cases of pulmonary tuberculosis and 10 of bacillary dysentery. No other reportable diseases occurred in greater numbers than this. One patient with poliomyelitis was found in St. Bernard Parish, and five cases of typhus fever were reported throughout the state. The week ending December 4 was the week in which the monthly total of venereal diseases was recorded. There were 1,382 cases of syphilis, 989 of gonorrhea, 40 of chancroid, 19 of lymphopathia venereum, and 6 of granuloma inguinale. Of the diseases that are reported weekly there occurred 37 cases of pulmonary tuberculosis, 35 of influenza, 19 each of septic sore throat and chickenpox, 11 of whooping cough and 10 of diphtheria. Two cases of poliomyelitis were reported this week.

HEALTH OF NEW ORLEANS

The Bureau of the Census, Department of Commerce, reported that for the week which ended November 13, 113 deaths occurred in New Orleans as contrasted with 156 in the previous week. Of these deaths 76 were in the white individuals and 37 in the colored. There were nine deaths in infants under one year of age. There was a big increase in the following week in the number of deaths in the city, 163 citizens of New Orleans expiring in this particular week of whom 106 were white and 57 were colored, and 11 were children under one year. The death rate in New Orleans was uniformly low throughout the year, but may have increased quite considerably in the latter weeks of November and early weeks of December. For the week ending November 27 there were 173 deaths as contrasted with the three year average of the corresponding week with 138 deaths. One hundred and fourteen of those who died were white and 59 colored, with 14 infant deaths. For the week closing December 4 there were 157 deaths in New Orleans, divided 92 white, 65 colored, with 25 infant deaths. Exactly the same number of deaths occurred in New Orleans in the week of December 11 as in the previous week, but there were 17 more deaths in the white population and 17 less in the colored. The infant mortality rate had gone down as there were only 12 infants who died this week.

DR. FRED J. MAYER (1859-1943)

The many friends of Dr. Fred J. Mayer will miss seeing his always cheerful and bright face at the annual meeting of the state medical society. Dr. Mayer died on December 1 in Opelousas at the age of 84. He had spent all of his life in Louisiana except for a relatively short time when his education was continued in Europe. Dr. Mayer taught for six years in the public schools and entered

Tulane Medical School from which he graduated in the year 1883.

The physicians of Louisiana are familiar with Mayer's work on yellow fever and tuberculosis. They knew him as well as president of the Louisiana State Medical Society, having been elected in 1913. He was president of the Attakapas Medical Society and he was a member as well of many social and civil organizations in Opelousas. His departure from this life will create a real vacancy in the medical profession of the state.

DR. A. A. AUCOIN (1862-1943)

Dr. A. A. Aucoin died on December 18 at Plattenville, Louisiana, at the age of 81. Dr. Aucoin was active in Assumption Parish not only in medical fields but also in the educational activities of this parish. He held a gold star certificate from the state board of health for fifty years service as a pharmacist.

DR. DIX H. ALVERSON

Dr. D. H. Alverson of Shreveport was born in 1880, graduated in medicine from Memphis Hospital Medical College in 1902. He died in Shreveport suddenly on September 7, 1943.

WOMAN'S AUXILIARY

"The primary factor in American life is a dauntless man. Out of self-faith, out of a clear vision and an unspeakable and unshakable confidence in his heart, such an American believes that he can stand up to the world of his times, whatever his times may be, refuses to be dissuaded or discouraged. In short, he doesn't quit. America abounds with such men. Their credit is character. Their funds are faith and hard work. Their purpose is the American way of life." (Henry J. Taylor.)

Such are our husbands, the doctors of our own United States. On June 3, 1943, Senator Robert F. Wagner, of New York—for himself and Senator James Murray of Montana—introduced in the Senate, Bill 1161, known to the Medical profession as the Wagner Act.

Ladies of the Auxiliary to the Louisiana State Medical Society, at this time when our husbands are either in the Army or overworked at home this is more than ever our fight to help in an educational problem so that the lay people of this state can know what this act would mean to the doctors, to their patients and to the United States of America as a whole, if passed in our Congress.

Do you know the meaning of this Act? Have you discussed it with your husbands and the leading doctors of your community? If so, make it a topic of conversation and pass resolutions in your Auxiliary making it a topic of conversation in your bridge, at your teas and at all social functions. But, first be sure that you have a talking knowl-

edge of this act and what it would mean if it was passed and set up in the United States.

This act will either be passed and enforced upon American people in a very short time or if we band together it will be doomed never to come up in our Congress again. It is up to us as members of the Medical Auxiliary to take this stand with our husbands in this fight. Should you want literature write to:

Dr. Val Fuchs
American Bank Bldg.
New Orleans, La.

asking him to have it put at your disposal.

Today our boys are fighting and losing their lives on the battlefield for Democracy. Will we stand

idly by and let the people be misled by the promise of cradle to the grave security at a cost of complete domination at the hands of the political bureaucrats?

In the words of Winston Churchill, "We must beware of trying to build a society in which nobody counts for anything except a politician or an official, a society where enterprise gains no reward, and thrift no privileges."

Wishing all of you a Happy New Year and greetings of the season, I urge you to make this your fight.

Mrs. M. C. Wiginton,

Chairman Committee Press and Publicity.

BOOK REVIEWS

Protein Hormones of the Pituitary Body: By H. B. Van Dyke, and others. New York, New York Academy of Sciences, 1943. Pp. 173. Price, \$2.00.

This monograph is made up of a series of seven papers given at a conference held by the Section of Physics and Chemistry of the New York Academy of Sciences on January 9 and 10, 1942. The introductory chapter by Van Dyke is an excellent, brief summary of the alleged functions of the pituitary gland. This is followed by papers on the criteria of purity of proteins, the hormones of the posterior lobe of the pituitary gland, the chemistry of thyloakentrin (the follicle-stimulating hormone), the luteinizing, lactogenic, growth and metabolic hormones of the anterior pituitary gland. Each chapter is written by an expert who has contributed extensively to the particular field under discussion. Emphasis is placed on methods of extraction and assay, purity of the substances and their physical and chemical properties.

The practitioner of medicine who has been using the anterior pituitary hormones in the treatment of various endocrine conditions should find this monograph of great interest and value. He will be encouraged by the effort and progress that is being made to provide him with purer preparations. He will also be grateful to the various authors for providing him with an excellent summary of material which is not easily available to him.

H. S. MAYERSON, PH. D.

The Mind of the Injured Man: By Joseph L. Fetterman, M.A., M.D. Chicago, Ill., Industrial Medicine Book Company, 1943. Pp. 260. Price, \$4.00.

This book, written for interested laymen as well as physicians, is a clear and simplified presentation of the effects of injury on the functioning of man's mind. It is remarkably complete.

The first four chapters on brain anatomy, physiology, psychology, history taking, physical examination, laboratory studies and x-ray are of use in introducing the layman to the subject of the book but are too elementary for the physician.

Beginning with Chapter Five there are good discussions of the pathology and symptoms of the various kinds of brain injury and the results of trauma on the diseased brain and already malfunctioning personality. Spinal cord and nerve injuries are considered briefly. With vivid case descriptions he shows the relationship of trauma in its various forms to the development of personality dysfunction and psychoses. There is an interesting and detailed chapter on the detecting and handling of malingering and an instructive chapter on the management of head injury cases, including psychotherapy and rehabilitation. His recommendation for compensation neuroses is very good—"long extended compensation for neurotic illness should be discontinued." The book also includes accepted, up-to-date methods of preventing and treating psychological casualties of warfare.

WALKER THOMPSON, M. D.

Manual of Fractures: By C. M. Shaar, M. D., F. A. C. S., and Frank P. Kreuz, M. D., F. A. C. S. Philadelphia, W. B. Saunders Co., 1943. Pp. 300. Price, \$3.00.

This book is written by a Captain and a Lieutenant Commander of the United States Navy. In the words of Rear Admiral Ross T. McIntire, who wrote the foreword, "it is a real contribution and much good should come of it."

The authors point out that on a ship at sea pendulum motion vitiates traction methods and in battles, encumbrances of traction may be additional jeopardy to the life of a convalescent. External skeletal fixation obviates many of these dangers and permits activity and ambulant recovery of practically all types of fractures.

The book deals almost entirely with the treatment of fractures with the Stader type of splint. The text and illustrations adequately describe the method of its application. The adaptability of the method is perfectly remarkable; from alignment and fixation of lighter fragments like those of the mandible to the more surprising adequately fixed "heavy" fragments like those of a fractured femur, their pictured results are convincing and in their anatomic accuracy even brilliant.

This book is a corroboration of a relatively new type of immobilization for fractures. It is convincing evidence of its adaptability to all types of fractures. It may well initiate a popular trend in the treatment of fractures.

HOWARD MAHORNER, M. D.

Rehabilitation of the War Injured, A Symposium:

Edited by William Brown Doherty, M. D. and Dagobert D. Dumas, Ph. D. New York, Philosophical Library, Inc., 1943. Pp. 684. Price, \$10.00.

This is a timely subject and an important one! The editors have used a good trick for meeting the time problem by drawing on the current literature for an accumulation of articles pertinent to the subject "Rehabilitation of the War Injured." The result is just what might be expected—a conglomeration of ideas.

There are many articles by excellent writers, these forming valuable and authoritative chapters. Most of them, however, like so much in the current literature, represent only the raw personal ideas of the individual author. They are interesting and stimulating, but not always generally applicable. Sadly enough, there are a certain number of articles reproduced which have nothing more favorable to be said of them than that their subject matter falls within the broad scope of the book's title. These add unnecessary bulk to the 684 pages, and many of them overlap as to material covered.

The fields of neurosurgery, neuropsychology, orthopedics, plastic surgery, ophthalmology, physiotherapy, occupational therapy, and general program organization are all included. An example of the natural shortcomings of this method of coverage is represented by the chapters pertaining to the single important problem of amputations.

Two articles are reproduced to cover amputations. Both are from the British literature. The result is a one-sided presentation of a subject concerning which the English authorities are in absolute disagreement with Canadian and American authorities. The English avoid end-weight-bearing and side-weight-bearing stumps and so use prostheses of a completely different principle than ours. Both sides of the problem should be presented.

The need for a fresh review of this subject of rehabilitation is becoming more urgent by the minute. This symposium collected by Doctors Doherty and Runes will help tide us over until a more concise and dependable reference is available.

DONALD T. IMRIE, M. D.

Roentgenographic Technique: By Darmon Artelle Rhinehart, A. M., M. D., F. A. C. R., 3rd ed. Philadelphia, Lea and Febiger, 1943. Pp. 471. Price, \$5.50.

There are few individuals interested in roentgenographic technic who are not familiar with the first two editions of this book. The third edition has been enlarged to include the advances made in this field.

As in previous editions, the author discusses in detail the procedures which are necessary to work out a satisfactory technic for the specific apparatus employed. This is accomplished by planned experiments and charts of diagnostic exposures. The thickness and roentgenographic densities of the part are considered of primary importance in the determination of the proper factors.

The sections on physics, roentgen ray equipment and the processing of x-ray equipment and the processing of x-ray films are clear but are not overburdened by minute and unnecessary details. In the remainder of the volume the technical procedures for roentgenography of each anatomical part are discussed. An adequate bibliography is included at the end of each chapter. There are 201 excellent illustrations of photographs, roentgenograms and line drawings.

This book should be considered an essential part of every x-ray installation. It should aid considerably in improving the quality of radiographic work if it is read carefully and employed as a source of reference in the unusual technical procedures.

J. N. ANÉ, M. D.

Injuries of the Skull, Brain and Spinal Cord:

Edited by Samuel Brock, M. D. 2d ed. Baltimore, Williams & Wilkins Co., 1943. Pp. 616, illus. Price, \$7.00.

The first edition of this volume, published in 1940, has proved sufficiently valuable to warrant revision within three years of its original publication. The second edition has been modernized by the careful revision of nine of the chapters and by the addition of a chapter by Paul F. A. Hoefer on electroencephalographic findings in cases of head injuries. The revisions have been made primarily in an attempt to encompass the newer types of injuries sustained in combat zones and also to emphasize the value of the immediate application of sulfonamide derivatives in the treatment of such injuries.

The chapter on the electroencephalogram in head injuries is based primarily on an analysis of 244 cases of head injuries treated between 1940 and 1942 at the Neurological Institute of New York selected from a group of 300 patients with head injuries on whom an electroencephalogram was made. Samples of electroencephalograms demonstrating normal and abnormal activity as well as a number of case reports are included.

Each of the twenty-three contributors to this volume has presented an excellent depiction of the numerous phases of injuries of the nervous system to constitute a unified and complete text on the subject, which can be highly recommended.

DEAN H. ECHOLS, M. D.

Body Poise: By Walter Truslow, M. D., F.A.C.S. Baltimore. The Williams and Wilkins Co., 1943. Pp. 502. Price, \$4.50.

This is an unusually good discussion of a subject previously passed over too superficially. Posture and body-building in general are at present very pertinent subjects because of their place in military training. Probably they have never been appreciated as fully in America as in the totalitarian states.

Doctor Truslow discusses anatomy and correlates it with body mechanics. He also covers a number of pathological conditions, and although some might criticize the author for his emphasis on exercise in the treatment of scoliosis, they cannot deny the fact that the more definite orthopedic measures are also included.

The illustrations are clear and the instructions for the physiotherapist definite. A unique contribution is the section on sports. With his background of close association with athletic activity of various types, the author has been able to analyze kinesiotically, the complex motions making up such sports as walking, golf, swimming, pole-vaulting, and classify them as to their effect on posture. This is a field deserving of much attention.

The book is written to help the layman, but should prove of value not only to workers in physical education but every physician who is interested in helping young people grow and develop properly. There is an anatomical glossary further to aid the lay individual.

DONALD T. IMRIE, M. D.

The Compleat Pediatrician: By Wilbert C. Davison, M. A., D. Sc., M. D. 7th ed. Durham, N. C.; Duke Univ. Pr., 1943. Pp. 256. Price, \$3.75.

The new edition of *The Compleat Pediatrician* is very welcome at this time. In these days where general men are doing pediatrics it is almost an essential in their library. The pediatrician needs it as he has not the time to do extensive reading.

This book is divided into seven chapters on the basis of the anatomical system chiefly involved, whereas the older edition is arranged in the sequence as a physician examines and interviews the patient.

This edition has the same chapters on laboratory procedures, diet, drugs, and nursing procedures that the old one has but all have been thoroughly revised.

SUZANNE SCHAEFER, M. D.

Allergy: By Erich Urbach, M. D. New York, Grune and Stratton, 1943. Pp. 1073. Price, \$12.

This large comprehensive work covers a great deal of literature on allergy, and it evidences a great deal of work by the author. Many younger men in the field will in this book obtain ideas about older and valuable contributions which may have appeared in the literature even before they studied medicine. Dr. Urbach brings the questions up to date, and all in all, the book is to be recommended. His ideas are more that of the European school of allergists. Some of his statements are not in agreement with the ideas of the reviewer. The section on allergic disorders is particularly excellent, and he goes to great length to show the importance of the study of allergy to general medicine. Many good ideas of treatment are included. It should serve as a good reference book for all medical men.

HENRY D. OGDEN, M. D.

The Inner Ear: Including Otoneurology, Otosurgery, and Problems in Modern Warfare: By Joseph Fischer, M. D., and Louis E. Wolfson, M. D. New York, Grune & Stratton, 1943. Pp. 421. Price, \$5.75.

In the authors' preface, Fischer calls attention to the paucity of information on the labyrinth in the text books on otology on one hand, and the bewildering maze of minutiae in the voluminous encyclopedias on the subject, on the other. He and Wolfson have therefore attempted in the present treatise to bridge this wide gap.

Major attention has been given to the labyrinth and its intracranial pathways, but the cochlea is adequately covered as well.

Surgery of the labyrinth for deafness is discussed and brought as far up to date as Lempert's fenestra nov-ovalis operation in which the fistula is made in the dome of the vestibule anterior to the ampulla of the external semicircular canal itself. This permits a larger fistula, made through thinner bone, and the fenestrum is created in that part of the vestibular labyrinth that has the largest circumference of perilymphatic space. The authors feel that although surgical treatment does not cure otosclerosis, the fact that many cases have shown improvement in hearing of up to five years' duration, justifies the operation at the hands of a skilled surgeon. They deplore the fact that there is still no rational medical treatment of otosclerosis because of lack of knowledge of its etiology.

Infection of the labyrinth, war trauma to the labyrinth, the role of the inner ear in aviation, are only a few of the subjects that are discussed with great clarity.

The volume is a definitely valuable contribution to the library of the otologist.

H. L. KEARNEY, M. D.

Dictionary of Biochemistry and Related Subjects:
Ed. by William Marais Malisoff. New York,
Philosophical Library, Inc., 1943. Pp. 580. Price,
\$7.50.

In the preface the editor declares the volume to be "a pioneering effort in an entirely new field. There have been no previous dictionaries of this kind. Furthermore, the concept of a 'dictionary' has been changed from that of a mere alphabetical glossary to something resembling an encyclopedia. The dictionary contains a great deal of glossary material and also a great deal of fairly lengthy authoritative discussion. It tries to maintain a balance between obsolescent, established and newly explored material. It is designed for readers of biochemical literature who might want the definition of terms used more than a decade ago, as well as terms just coined. There was no intention of replacing textbooks or abstract or review journals, except in so far as certain items are greatly neglected or not easily available."

Of approximately ten thousand terms defined, many include chemical tests for the substance in question. Terms defined include such items as: abdomen, abort, liver and fuzz, while whiskey ". . . is stated to have intoxicating effects when taken internally." On the other hand, folic acid, biotin, pantothenic acid and sufanilamide are included. The short articles by forty-six well-known collaborators include five to 15 pages of discussion on such subjects as Autolysis, Chemotherapy, Digitalis, Glucosides, Biochemistry in Relation to Psychiatry, as well as Physiology of Amino Acids, Carbohydrate Metabolism, Permeability, etc. Each article is followed by a list of representative references.

The quality of the paper available in these war times does nothing to improve the legibility of the formulae, equations and charts employed. In some cases this illustrative material has been so drastically reduced in size as to become difficult to read with a magnifying glass.

Considered by and large, however, this dictionary will answer most questions of a biochemical nature in the mind of almost everyone except the expert in this field, and the editor's pioneering effort is to be commended.

A. O. KASTLER, Ph. D.

Sex Hormones: Ed. by F. C. Koch and Philip E. Smith. Lancaster, Pa., Jacques Cattell Press, 1942. Pp. 146. Price, \$2.50. (Biological Symposium, v. 9.)

This symposium on the sex hormones is edited by F. C. Koch and Philip E. Smith, and contains a

foreword by Frank R. Lillie. It forms one of several symposia presented as part of the 50th anniversary of the University of Chicago, in September 1941.

The volume contains eight articles divided into two groups, the first the sex hormones, their action and metabolism; the second deals with the hormonal factors in the inversion of sex.

The comparative biology of the testicular and ovarian hormones is described by Moore; and their comparative metabolism influences is considered by Kenyon. An excellent chapter on the metabolism of estrogens is contributed by Doisey. The metabolism of androgens is discussed by F. C. Koch whose paper contains some clinical data. The foregoing papers should be of interest to those with special interest in these fields of endocrinology.

The concluding chapters are of little clinical interest and include a discussion of sex inversion as noted in bird plumage by Danforth; sex inversion in the amphibian by Humphrey; the effect of hormonal factors in sex and inversion by Greene, and Hormones and Experimental Manifestations of Sex by R. K. Burns, Jr.

This symposium is clear, concise, authoritative, but of limited interest to physicians.

W. B. WEINSTEIN, M. D.

PUBLICATIONS RECEIVED

The Caxton Printers, Ltd., Caldwell, Idaho: *Nascent Endocrine Therapy*, by John Franklin Ritter, M. D.

The Commonwealth Fund, New York: *The Hospital in Modern Society*, edited by Arthur C. Bachmeyer, M. D. and Gerhard Hartman, Ph.D.

Grune and Stratton, Inc., New York: *Pathology and Therapy of Rheumatic Fever*, by Leopold Lichtwithz, M. D. *Elements of Medical Mycology*, by Jacob Hyams Schwartz, M. D.

Charles C. Thomas, Springfield, Illinois: *The Modern Management of Colitis*, by J. Arnold Bargen, M. D., M. S., F. A. C. P. *The Modern Treatment of Syphilis*, by Joseph Earle Moore, M. D.

J. B. Lippincott Company, Philadelphia: *Surgical Errors and Safeguards*, by Max Thorek, M. D., LL.D., D. C. M., F. I. C. S., 4th ed.

Lea & Febiger, Philadelphia: *Backache and Sciatic Neuritis*, by Philip Lewin, M. D., F. A. C. S.

The Williams & Wilkins Company, Baltimore: *Pain, Proceedings of the Association for Research in Nervous and Mental Disease*, Volume XXIII.

The University of Chicago Press, Chicago, Illinois: *A Manual of Medical Parasitology*, by Clay G. Huff.

New Orleans Medical

and

Surgical Journal

Vol. 96

FEBRUARY, 1944

No. 8

"NEAR MISSES" IN X-RAY DIAGNOSIS*

FRED JENNER HODGES, M. D.†
ANN ARBOR, MICHIGAN

For those of us who are stay-at-homes, relegated to the prosaic task of muddling along in civilian practice while the flower of our profession has gone off to war, the reported exploits of our armed forces in foreign lands and storied seas seem remote and, therefore, doubly thrilling and romantic. Time was when we, as youngsters with remarkably elastic imagination, could transport ourselves at will from the drab surroundings of our own back yard to the heaving decks of the pirate ship on the Spanish Main, to the trackless wastes of the last of the Indian country, or in fact to any spot or period in time which at the moment might suit our fancy. We were utterly unabashed by the lack of authentic stage property, able to transform a strip of wooden lath pointed at one end with a shorter piece nailed crosswise near the other into a wicked scimitar with jeweled handle in the twinkling of an eye.

This morning I ask you to turn back the hands of the clock, around and around again and again, to enjoy once more for a brief moment the pleasures of the land of make believe. I promise you that the game is interesting and not entirely devoid of profit, for the game we shall play, though its setting be placed over and around the

far flung islands of the Southwest Pacific, will be staged with properties immediately available in every hospital and office building where medicine is practiced within the confines of the continental United States.

In the Army and the Navy and the Marine Corps the business of flying war planes calls for elaborate periods of graduated training which we with enormous impudence will ignore, for in our imaginations we are already aces of the air, the idols of our ground crews, itching for action and lots of it. I invite you to join me as members of a four motored bomber crew; you may select whichever position appeals to you most. We are off on a thrilling reconnaissance flight, armed to the teeth with bombs of every size and description, a full complement of cannon and machine guns of heavy and light caliber scattered at various points of advantage throughout the fuselage, nose, tail and top wing turrets. We will write our own orders as we proceed and make plenty of news for Elmer Davis to dispense to a waiting public at home. Since we must have something to represent the plane and its armament let us use whatever x-ray equipment is at hand and let us think of the diseases which beset our patients as the Japs we are out to apprehend and destroy.

We are much too eager to waste time in pointless cruising about and at once we sight our first objective in the form of a patient who has come to our hospital with the complaint of rectal bleeding which her physician has correctly diagnosed as a carcinoma of the sigmoid requiring surgical attention. Just for practice, if not pure sport, we drop down recklessly and rake

*Read before the Seventh Annual Meeting of the New Orleans Graduate Medical Assembly, March 15-18, 1943.

†From the Department of Roentgenology, University of Michigan, Ann Arbor, Michigan.

this small Jap supply ship with heavy machine gun fire. For good measure our bombardier lets fly with a small bomb in the form of an admission chest film. He misses the waist of the ship but scores a near miss which springs her ribs and turns up an entirely unsuspected solitary pulmonary metastasis. That's sport. Our aim may be a little poor but we're having fun.

Being green at the game and terribly eager we try our next enemy, some form of disturbance which is seriously interfering with respiration and, this time, our chest "shot" scores a hit in the form of a clearly evident mass of thyroid tissue extending downward through the thoracic inlet pos-

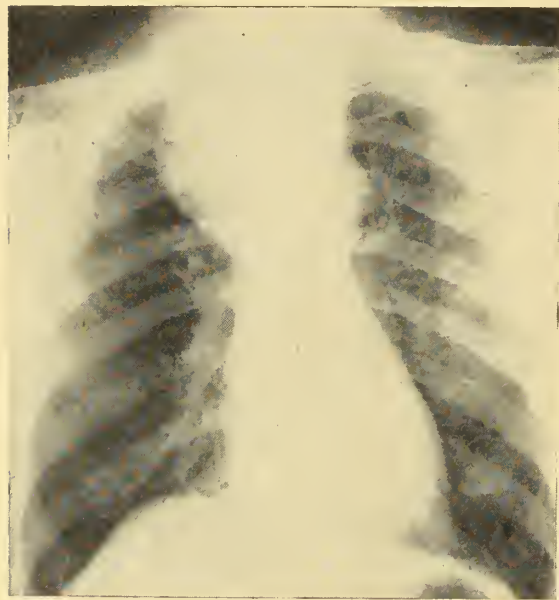


Fig. 1—Substernal extension of the thyroid.

terior to the sternum and a little to the right (fig. 1). Flushed with success, we find another victim and aim for the same spot. We're good; we can't miss—but we do. To be sure it's a near miss because there in the extreme upper portion of the mediastinum, again slightly to the right of the mid line, is a shadow to all intents and purposes the twin of the one we have just encountered, but this time it is not produced by substernal thyroid tissue. This is an aneurysm of the innominate artery (fig. 2).

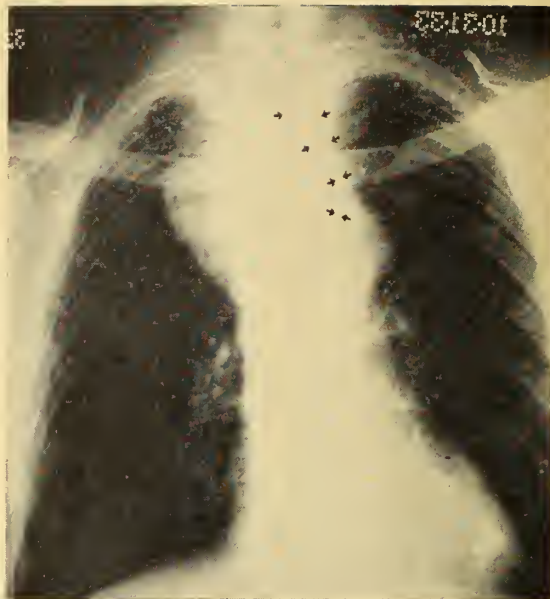


Fig. 2—Innominate aneurysm.

What's the matter there, bombardier? You're supposed to be an expert. Let's see you try your luck at this one. Again the ocean leaps high into the air just off the starboard beam and once more our observer reports results in the form of that selfsame shadow in the upper mediastinum, once



Fig. 3—Primary bronchogenic carcinoma.

more just to the right of the mid line. We can't claim a direct hit, however, for this time it is neither substernal thyroid tissue nor innominate aneurysm. The thoracic surgeon reports a neoplastic mass which our pathologist finds is a primary bronchogenic carcinoma (fig. 3).

Here comes a bigger ship and smelling the likelihood of anti-aircraft protection we hunt for altitude and let go with three bombs. The range finder shows us a much larger mass this time in the upper mediastinum. The second bomb, a swallow or two of barium, shows deviation of the esophagus as well as the trachea and our third bomb, a kymographic exposure, tells us that this mass does not pulsate. We make a turn and come back at right angles to the course of our target and this time, with our lateral projection, we locate the mass posterior to the trachea. Our recent experiences are teaching us to be cautious and this time we do not claim a sinking but merely report that we have damaged the enemy. We have enumerated a few possibilities such as those in our recent experiences, but we hesitate to run the risk of frank error. The ship is ultimately boarded by one of our naval vessels in the form of the thoracic surgeon again and it is he who reports to our commanding officer that the mass is an aberrant thoracic thyroid despite its unusual position posterior to the trachea. Yes, we made a series of near misses in that instance. We came close and we set the stage for the surgeon, but we missed the diagnosis ourselves.

Let's take a "potshot" at this slow-moving, unescorted ship. Really this is too easy, simply a hugely enlarged heart. But again we have scored a near miss and one of the other planes in our squadron gets credit for the kill by showing the large heart to be in fact a heart of normal proportions surrounded by a considerable amount of pericardial fluid, easily recognized when some of this is aspirated and replaced with air. By now we are getting just a little bit annoyed with the performance of our bombardier who pleads for just one more chance. Far below us, plowing along wearily at slow

pace, is a lumbering cargo ship which we have been watching for some time. Actually he is an elderly gentleman who has been seen repeatedly during the course of treatment for chronic osteomyelitis in one tibia. All of a sudden he has developed a new chain of symptoms characterized by extreme dyspnea, engorgement of superficial veins over the upper chest, edema and cyanosis of face and neck. The pilot suspects that there is something significant in the change of course, wonders audibly about the possibility of mediastinal lymphoblastoma, but the bombardier drops a stick which quickly exposes the whole situation—just a commonplace case of cardiac enlargement which he thinks amply explains the profound circulatory disturbance, and most of us in the crew are inclined to believe that his assumption is justified (fig. 4). The

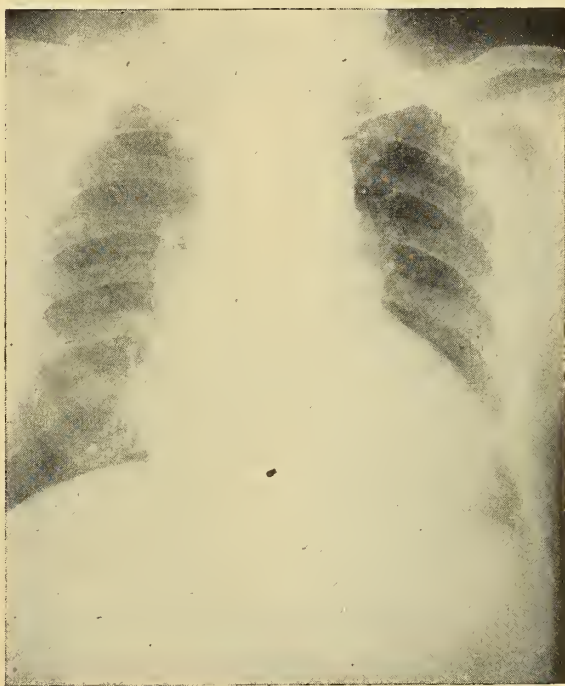


Fig. 4—Lymphoblastoma invading the auricles of the heart.

commanding officer of our radiation therapy section refuses to let his dive bombers go to work and this time one of our own submarines surfaces nearby and our pathologist goes aboard the stricken vessel, promptly reporting the startling news that

the simple cardiac enlargement which we reported had masked a most astounding state of affairs. The pilot's hunch had been correct. This was lymphoblastoma but an expression of that disease new to our entire crew. The enlargement of the cardiac shadow was the result of extensive invasion of the wall of the left auricle by lymphoblastomatous tissue which also involved the entire mass of mediastinal lymphoid tissue. Shall we call that a "near miss"?

Were it not for our bombardier's remarkable performance in the next few minutes I am afraid that he might have been demoted at this juncture. With remarkable accuracy from high altitude and with what appeared to be a pure random shot he picked up a poorly defined double shadow in the cardiac area, and his second bomb in the shape of the administration of barium, clinched his snap diagnosis of a sizable diaphragmatic hernia involving nearly one-half of the stomach. There was a very near miss followed by a smashing direct hit right down the funnel.

On his very next try he scores again, reporting diaphragmatic hernia to the right of the mid line on the basis of a circum-

scribed accumulation of air to the right and posterior to the cardiac shadow (figs. 5a, 5b). No need for the coup de grace which,



Fig. 5—(b)—Diaphragmatic hernia, lateral.

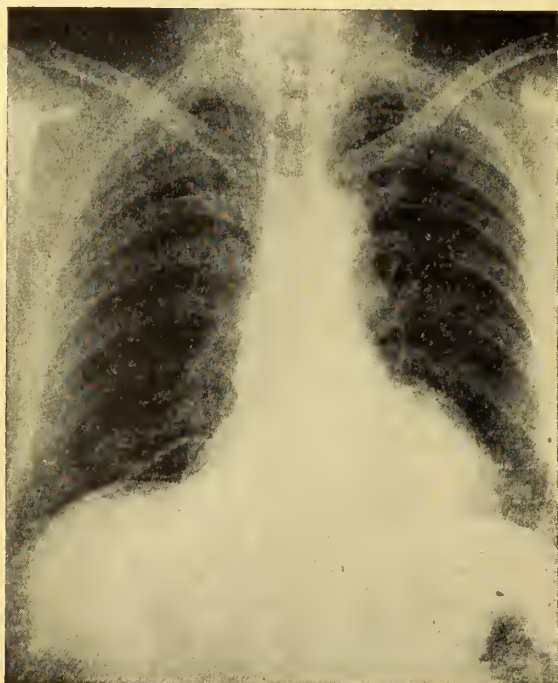


Fig. 5—(a)—Diaphragmatic hernia, antero-posterior.

however, is supplied in due time, again by the submarine captain, our pathologist. We are all in better spirits now and cheer lustily as the bombardier uncovers another of the same sort. There is the air pocket well above the diaphragm posterior to the heart but for good measure he orders the machine gunner to send down a volley of tracer bullets in the form of administered barium and at once wishes that he hadn't done so for the barium slips innocently past the air pocket and into a perfectly normal stomach in normal position (figs. 6a, 6b), and even the subsequent barium enema fails to show any of the hollow viscera within the lesion (fig. 6c). The attack was not an entire loss, however, because the ship was amply spotted and slowed down and was soon overtaken by our friend, the thoracic surgeon, who identified the lesion as a large pulmonary cyst, communicating with a bronchus. We are in no mood to criticize our bombardier after his recent exploits.

He misses the next target but the miss is very close for the malignant gastric ulcer

so typically studded with masses of neoplastic tissue protruding into the base of the crater turns out to be a benign peptic ulcer which has eroded through the entire wall of the stomach into the pancreas, but he follows up with a direct hit which clearly identifies the cause of profound pyloric obstruction as a small annular carcinoma at

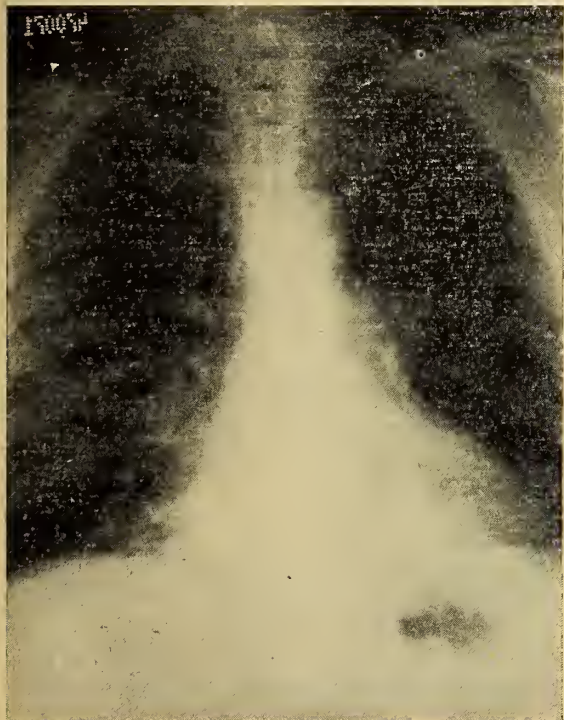


Fig. 6—(a)—Pulmonary cyst with bronchial communication, antero-posterior.

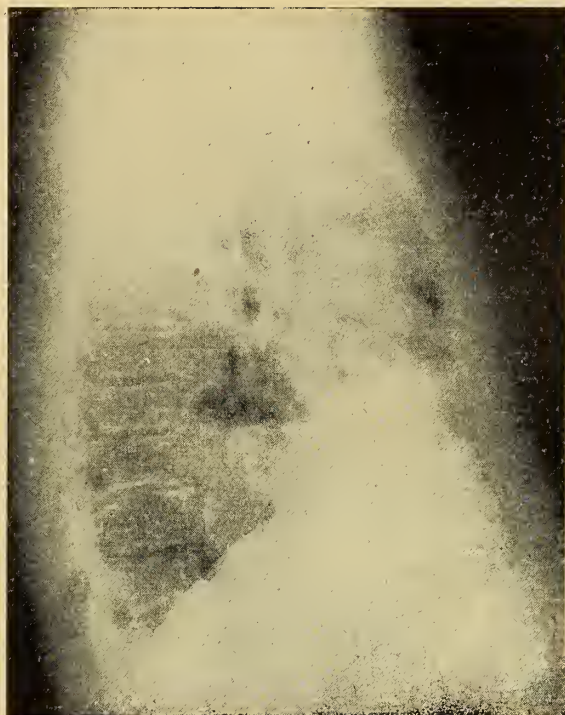


Fig. 6—(b)—Pulmonary cyst with bronchial communication, lateral.



Fig. 6—(c)—Same case following barium administration.

the extreme lower end of the organ (fig. 7). Now comes another near miss and one which is really heartbreaking. He had the target directly on the intersection of the crosswires. The characteristics of a large proliferative, annular neoplasm deforming the lower end of the stomach and ulcerated near the pylorus itself seemed unmistakable (fig. 8), and yet we can only claim a near miss which resulted in operative intervention and the ultimate discovery that the lesion was in fact a chronic benign ulcer involving the mucosa of the duodenum on one hand and the stomach on the other hand and surrounded with an extensive mass of pyogenic granulation tissue simulating carcinoma.

And now he tries to blast from the surface of the ocean a sleek and elusive destroyer. With deft fingers he manipulates the controls of the bombsight, searches out the vitals of his prey, and yells with exulta-



Fig. 7—Prepyloric annular carcinoma.

But our game must end—it cannot go on uninterruptedly, and we are glad to stop with a glorious hit upon an enemy plane carrier. At very long range and in spite of heavy smoke screening the last bomb in our rack whistles true to its mark and the



Fig. 8—Chronic benign pyloric ulcer.

tion as he uncovers a small but ugly looking ulcer on the lesser curvature within that last inch and a half supposedly reserved for neoplasms. Almost since he can remember he has had it drummed into his ears that gastric ulcers in this locality are almost uniformly malignant. Somehow he has taken this belief at face value and he reads into the mounded depression which surrounds the somewhat conical crater a sessile tumor which has ulcerated at its very center, or which perhaps has developed on the base of an originally benign lesion. Subsequent resection and searching examination of the tissue removed shows no suggestion of the expected microscopic evidence of neoplasm. This was a near miss, but a very important one because in short order proof positive was forthcoming regarding the true nature of the lesion and resection of such ulcers is certainly a wise move.

proud carrier breaks in two amidship. In the course of routine screening of all patients admitted to the hospital we pick up the telltale skeletal signs of erythroblastic anemia in a child entering the pediatric service. We follow up our advantage quickly with skull and extremity films which prove the diagnosis beyond doubt and by telephone we beat the patient to the pediatric clinic with the diagnosis of his relatively rare disease figuratively wrapped in cellophane.

Somewhat facetiously, I am afraid, but with the sincere purpose of demonstrating the thrill which can be obtained from the daily practice of radiology, I have presented you with a few of the experiences which convince the members of our specialty that we can be of real service even though our observations and opinions are by no means uniformly infallible.

CRANIOCEREBRAL TRAUMA*

A DISCUSSION OF GENERAL MEDICAL
AND NURSING CARELIEUTENANT COLONEL R. GLEN SPURLING
MEDICAL CORPS, ARMY OF UNITED STATES

The subject of head trauma is so broad that not even a cursory review could be given in one short period. Therefore, I have elected to speak upon one phase of the problem. Perhaps it would have been more in keeping with the times had I selected a topic like "penetrating wounds of the brain," or that extraordinarily interesting new group "blast injuries to the brain." However, I selected the less dramatic title deliberately, for it is so easy to overlook and misapply these simple nursing and medical measures that it takes constant repetition to keep us reminded of their importance.

Inflexible, routine treatment of patients suffering from head trauma is a dangerous conception; no other group of surgical patients demands such individual consideration. Excellent therapy for one patient may be poison to another; yet the two, to superficial examination, may not be unlike in their clinical aspects. Alert, watchful care is perhaps the most important feature and since the patient's condition may vary from hour to hour, constant, efficient nursing is of prime importance.

The symptoms of traumatic shock are observed infrequently in the uncomplicated case of head trauma. As a matter of practical importance, if the patient is in shock when first seen one-half to one hour after injury, one should be careful in seeking for other injuries—a broken neck, a fractured femur, or a ruptured viscus with intrathoracic or intraperitoneal hemorrhage.

When signs of surgical shock are observed, the treatment of this state takes precedence over every other consideration. The application of external heat, the administration of plasma, fluids, stimulants and sedatives, all these and other shock treat-

ment methods are too well known to bear repetition here.

The common practice of rushing unconscious patients to the x-ray room is dangerous if used routinely. Skull roentgenograms may be almost indispensable for diagnosis in some cases but certainly in the vast majority of head injuries this examination contributes no important data during the acute phase of the illness. When roentgenograms are indicated it is essential that the nurses, orderlies and x-ray technicians understand the elementary dictates of first-aid care. Rough handling in transferring the patient to the x-ray table contributes to many fatal outcomes. Portable x-ray equipment has reached such a high degree of perfection that satisfactory film of the head can be made without moving the patient.

Roentgenograms of depressed skull fractures are invaluable, but in most instances the diagnosis of depression can be made clinically by knowing the type of object striking the head, and more important, by palpating the skull through the scalp wound. When extradural hemorrhage is suspected, a linear fracture through the middle meningeal groove is useful evidence. When the fracture extends into the accessory nasal sinuses an x-ray examination may rarely disclose air in the ventricles or the subarachnoid space, thereby giving information which may be imperative in the proper management of the case. However, these are matters which are of importance only when surgical intervention is contemplated and never during the primary treatment of the unconscious patient.

Restlessness is a disturbing early complication of head trauma. If it is only of mild degree, simple nursing measures are sufficient; when extreme, sedation becomes necessary. The time-honored practice of giving morphine to restless patients is conceded dangerous by most authors. As a matter of fact, in certain basal injuries in which the hypothalamus or brain stem is affected, morphine in tiny doses (1-24 to 1-12 gr.) is a valuable therapeutic adjunct. However, the customary dose of 1-4 to 1-2

*Read before the New Orleans Graduate Medical Assembly, New Orleans, March 15-18, 1943.

grain is dangerous because of the depressing effects upon the respiratory centers.

Paraldehyde is, perhaps, the best available drug to quiet the restless patient. It may be given by mouth, by rectum or by vein. For an adult an average oral dose is one ounce of the elixir every four to six hours as needed; when administered by rectum twice this amount may be safely used; when used intravenously 2 to 3 c. c. of this elixir in 10 c. c. normal saline, slowly administered, is adequate. A mixture of bromides and chloral is also a safe sedative in head trauma. The barbiturates, unless given in very large doses, are not effective and in many cases seem to add to the excitability of the patient. Extreme restlessness may last for several days and in treating this group of patients it is best to let them thrash about the bed under restraint for at least half of each 24-hour period.

Adequate nourishment is always a problem in the unconscious patient. Intravenous dextrose is adequate for one or two days, but if unconsciousness persists, protein deficits must be supplied by gavage. A basic caloric intake should be maintained throughout the illness and the usual vitamin deficiency should be supplemented.

The optimum fluid intake level is a moot question. In some clinics severe dehydration is practiced. Not only is the fluid intake drastically reduced but further dehydration is accomplished by magnesium sulphate orally and rectally and by hypertonic dextrose solutions intravenously. The proponents of this method justify it by assuming that the control of intracranial pressure is the major consideration in the treatment of head trauma and that it is effectively accomplished in this manner.

Other observers believe that this radical form of dehydration is not only unnecessary in the majority of patients, but is often harmful. The principle of dehydration is founded upon the conception that most patients with head injuries suffer from increased intracranial pressure. There has been accumulated a vast amount of data, experimental and clinical, which indicates that the intracranial pressure in the acute

state of injury is seldom greatly elevated and is often normal or lower than normal. In my own clinic a high spinal fluid pressure is considered valuable evidence favoring a surgical complication — extradural, subdural or intracerebral clot.

Under average conditions a fluid intake of 2000 c. c. per 24 hours is recommended. It is wise to consider the individual needs of the patient and the influence of temperature and humidity upon fluid requirements. In the unconscious patient fluids are best supplied intravenously as 5 or 10 per cent dextrose—the first 1000 c. c. as 5 per cent dextrose in Ringer's solution and the second 1000 c. c. as 10 per cent dextrose in distilled water. Ten per cent dextrose should be given very slowly or else the sugar will be spilled into the urine. With prolonged unconsciousness the 2000 c. c. fluid level is maintained by gavage.

SPINAL PUNCTURE

There is a wide variation in opinion regarding the usefulness of cerebrospinal fluid withdrawal in the treatment of acute head trauma. Some observers maintain that the practice is dangerous while there are those of equal authority who contend that spinal fluid drainage is one of the most valuable therapeutic measures.

There is little doubt that the dangers of lumbar puncture in head trauma have been over-emphasized; in fact, in some clinics the aversion to the procedure borders on the superstitious. To reach a decision in regard to spinal puncture one must study the effects of withdrawal of lumbar cerebrospinal fluid.

If the initial pressure, either in the supratentorial or the infratentorial fossa, is high, sudden withdrawal of fluid from the spinal subarachnoid space may precipitate a pressure cone—at the incisura in case the supratentorial pressure is highest and at the foramen magnum in case the subtentorial pressure is greatest. Pressure cones may result in immediate death or alarming increase of medullary symptoms. These accidents occur usually when the spinal fluid is withdrawn rapidly and in large amounts

and are uncommon in patients who have a reasonable chance of survival.

In the absence of increased intracranial pressure spinal puncture should be an exceedingly safe procedure. In my experience, the contra-indications to lumbar puncture are as follows: (1) Clinical evidence of high intracranial pressure; (2) clinical signs pointing to an expanding lesion in the posterior cranial fossa.

As a diagnostic procedure lumbar puncture is invaluable. When the clinical signs of increased intracranial pressure are equivocal, spinal manometric readings yield invaluable information. Diagnostic lumbar punctures are performed with a small needle, and not more than a few drops of fluid are lost while the pressure readings are being made. Also, observing a drop of the fluid gives some index as to the amount of blood it contains. While the number of red cells in the cerebrospinal fluid is not an accurate index to the degree of brain damage, it does indicate the degree of meningeal irritation which may be expected later in the convalescence. One word of warning—never perform the Queckenstedt test in the course of a diagnostic lumbar puncture on a patient with a craniocerebral injury. This maneuver increases the danger and yields no valuable information. This test is useful only when a spinal subarachnoid block is suspected.

As a therapeutic measure spinal puncture is of little or no value and may be harmful in acute head trauma. By therapeutic lumbar puncture is meant the drainage of cerebrospinal fluid in sufficient amount to change the volumetric relationships within the skull. The proponents of this method of treatment advise draining fluid until the spinal fluid pressure registers 50 to 100 mm. The theory that drainage promotes a more adequate blood supply to the brain is open to question. If an extradural, subdural, or intracerebral clot is suspected, and the diagnostic spinal puncture shows the pressure to be high, one should never be tempted to drain fluid to reduce pressure for a sudden fatality may result.

There comes a time, however, in many cases of head trauma when therapeutic lumbar punctures are exceedingly valuable. Blood in the cerebrospinal fluid is an irritant and, after hemorrhage has ceased and the contaminated blood is being absorbed, irritative meningitis is often a serious complication. Spinal drainage at this stage of meningeal irritation relieves symptoms dramatically. The procedure should be repeated once or twice daily until the fluid is almost free of color. There is considerable evidence to indicate that the late drainage of blood contaminated cerebrospinal fluid may be valuable in reducing post-traumatic sequelae.

HYPERTONIC SOLUTIONS

The routine use of hypertonic solutions in acute head trauma is a practice which cannot be condemned too severely. This form of would-be therapy has gained alarming popularity. When one inquires as to the treatment the patient has already received, too frequently there is the reply, "a spinal puncture and 100 c. c. of 50 per cent glucose intravenously." Fortunately, intravenous hypertonic glucose is tolerated remarkably well and probably very few patients gain or lose their lives because of it.

There is a distinct place, however, in head therapy for intravenous hypertonic solutions. They may be of great value in temporarily reducing intracranial pressure in desperately ill patients with surgical complications while the operating room is being prepared. Also, there is a relatively larger group of patients who on the second to fourth day of their illness develop meningeal irritation with high intracranial pressure. In this group, judicious use of hypertonic solutions is beneficial.

Care should be exercised in the selection of the hypertonic solution for each one possesses certain advantages and disadvantages. Hypertonic sodium chloride is perhaps the most efficient one of the group for immediate reduction of intracranial pressure. However, the action is short and the drug accumulates in all soft tissues of the body before it can be excreted and a secondary wave of edema results. Concen-

trated dextrose has a similar action with respect to the physical properties of the solution. Either of these drugs may be used to advantage when it is desirable to relieve suddenly the intracranial pressure (as when an extradural clot is awaiting surgery).

When a prolonged reduction of pressure is desired, hypertonic sucrose (50 per cent) possesses certain advantages. Sucrose is not metabolized; therefore, it is excreted as sucrose. It is excreted slowly, and the dehydrating effect is prolonged. It is not collected in the soft tissues; hence, there is no secondary wave of edema. This drug is not without danger for renal damage of severe grade has been demonstrated in patients who have received relatively small amounts of the solution.

Dehydration by magnesium sulphate administered by the gastrointestinal tract makes an already difficult nursing problem more difficult, and the therapeutic value no greater than sucrose given intravenously.

POSTURAL DRAINAGE

If the blood pressure is normal or higher than normal the head-up position is desirable for the first few hours to discourage venous bleeding. But if the conscious level is so low that the gag reflexes are diminished or abolished, saliva and secretions from the nasopharynx drain into the bronchial tree in an endless stream. When the patient's respirations become rapid and noisy and his color cyanotic, it is too often concluded that his lungs are filling up from a failing circulation. The unconscious patient from any cause seems to have an excess amount of mucoid and salivary secretions. Perhaps the over-secretion is due to vagal paresis; certainly, in all patients with vagal involvement this unusual flow of bronchial mucus seems to occur. The horizontal position, particularly if the patient is on his back, is almost as bad as the upright position.

A large accumulation of mucus (or blood) in the bronchial tree impedes free respiratory exchange and interferes with aeration of the circulating blood. As a

consequence, anoxemia of all tissues of the body, including the brain, develops. When anoxemia is superimposed upon an already damaged brain, the impending tragedy is not long delayed. The customary use of the oxygen tent or oxygen tube is not effective if there is mechanical impediment to the free flow of gases in the respiratory passages.

Postural drainage is perhaps the most important single contribution to the subject of head trauma in the past decade. The foot of the bed is elevated by whatever means available until the plane of the bed forms an angle with the floor of not less than 30 degrees. The patient is placed on his abdomen or side so that the upper trachea, nasopharynx, and mouth are in a position to permit the drainage of secretions by force of gravity. Patients who are cyanotic from imperfect aeration and who have labored difficult respiration often breathe quietly and regain normal color within a few minutes after correct postural drainage is instituted. A deeply unconscious patient may be changed from side to side, always keeping the corner of the mouth in a dependent position. This head-down position apparently does not embarrass the general circulation.

OXYGEN THERAPY

Hyperthermia complicating trauma to the head has grave prognostic significance. It usually indicates serious damage to the brain stem or hypothalamus—but in many instances not severe enough to be compatible with recovery, provided the fever can be kept within reasonable bounds. Successful treatment of hyperthermia often requires the firm hand of the attending physician for the methods employed violate many time-honored traditions of the nursing profession.

When fever rises above 103 degrees F., all clothing and bed covers should be removed and the patient sponged with tepid water or alcohol. No covering should be replaced until the fever drops 2 degrees. If the body temperature rises in spite of these simple methods, sheets wrung from ice-cold

water should be applied and a strong breeze from an electric fan allowed to play over the entire body until the sheet is dry. Rectal temperatures should be recorded every fifteen minutes. If these efforts are applied boldly, the body temperature can be kept below a dangerous level until the issue is decided by other factors. Morphine in small doses (1-24 to 1-12 gr.) every two hours is also helpful in controlling extreme hyperthermia.

CEREBROSPINAL FLUID LEAKS

The recommended period of bed rest in strict recumbence for patients who have sustained brain injuries has in most neurosurgical clinics varied from two to three weeks. My own students have been taught for years that the recumbent position is most satisfactory in providing rest for the injured brain and that it reduces the probability of troublesome sequelae. Yet, in spite of prolonged bed rest the majority of my head trauma patients have complained of headache, dizziness, unsteadiness, and many ill-defined nervous symptoms. The "post-concussion syndrome" has almost become synonymous with "head trauma."

Recent personal experiences, prompted by reports from the English neurosurgeons, indicate that patients with injuries to the brain may be treated ambulatorily soon after full consciousness is regained without serious consequences. In fact, results thus far indicate that the post-concussion symptoms are observed less frequently and are less severe than would have been expected in a similar group of patients treated by prolonged bed rest. These observations are still too incomplete to justify preliminary analysis of data, but I am encouraged to continue for the present the following routine upon uncomplicated head trauma patients:

1. Upon regaining consciousness the head of the bed is elevated to permit semi-reclining or upright positions.
2. Bathroom privileges after 24 hours of consciousness.
3. Fully ambulatory as desired after 48 hours.

4. Discharge to duty after 10 days to three weeks depending upon the severity of the injury and completeness of recovery.

SUMMARY

Permit me to say that these remarks upon medical and nursing problems in head trauma have been taken from my personal experience; and, therefore, have sounded more didactic than they were intended. No doubt many of you have methods as good or better for each of the problems discussed. We cannot re-emphasize too often the importance of these non-operative methods for most certainly correct application of them are responsible for "turning the tables" favorably for many seriously injured patients.

LEPTOSPIROSIS

REPORT OF TWO CASES

GILBERT BALKIN, M. D.*
NEW ORLEANS

This is a report of the only two cases of leptospirosis ever correctly diagnosed, as provided by laboratory findings, in the history of Touro Infirmary, at New Orleans, Louisiana. The diagnoses were confirmed by studies at the National Institute of Health, Bethesda, Maryland. A clinical discussion of the condition produced by the leptospira will be followed by case presentations.

CLASSIFICATION

Any infection caused by the leptospira produces the condition known as leptospirosis. There are several types of leptospira, and the clinical picture may vary with the type of organism as follows:

1. *L. icterohemorrhagiae*—produces specific infection, known as Weil's disease (spirochetal jaundice)¹.
2. *L. canicola*
 - a) in Europe—produces no jaundice in dog or man

*From the Departments of Medicine of Tulane University and Touro Infirmary, New Orleans, Louisiana.

b) in America—may produce jaundice in dog or man

3. *L. grippo-typhosa*—in South Eastern Europe; produces swamp fever (*maladie de la vase*, marsh fever)

4. *L. pyrogenes*—in Dutch East Indies
Other leptospira which are less common are:

5. *L. hebdomadis*—produces Japanese seven day fever

6. *L. autumnalis*—produces autumn or Hikijami fever.

HISTORY

The specific infection caused by the *Leptospira icterohemorrhagiae* has been described frequently in the literature, the first classic description having been made in 1886 by Weil. In 1918 the causative organism was classified by Noguchi². In the United States the first case was reported by Wardsworth in 1922³; this was the result of an infection caused in the laboratory when a worker accidentally pricked her finger with the needle on a syringe filled with a virulent culture of *L. icterohemorrhagiae*. Seven days later the patient became violently ill and about two weeks later the causative organism was recovered by guinea pig inoculation with blood from the worker.

A little over 100 cases have been reported in the American literature, whereas from 1924 to 1937 there were 852 recognized cases in Holland.⁴ There is no satisfactory explanation as to why it has been rarely diagnosed and more rarely proved in this country.

MODE OF INFECTION

The leptospira has been found in from 10 to 30 per cent of the wild rats all over the world. The organism lives in the animal's kidneys and is discharged in the urine. The water into which the organisms are excreted is infectious for a period of about three weeks. Man is infected either through abrasions of the skin, through the gastrointestinal tract, or through the mucous membrane of the eye⁵.

Most of the cases have been in persons whose occupations necessitated their work-

ing in wet places where rats have been. As a result, the disease has been discovered in sewer workers, fish cutters, miners, dock workers, restaurant workers and others exposed to rat-infested surroundings where moisture is present.

CLINICAL FEATURES

The clinical course of the disease may be divided into three stages, which run into each other without a sharp line of demarcation. The incubation period is about seven days.

First Stages: This may be called the septicemic stage; it lasts from two to nine days. During this period the leptospira is circulating in the blood stream and can be found in blood serum or plasma.

The onset of the disease is sudden, even in mild cases. There may be chills, fever, severe headache, and marked prostration. Abdominal muscle pain may be associated with vomiting, and the condition may be difficult to distinguish from an acute "surgical abdomen." A bloody sputum may be expectorated and actual pneumonia may be present.

Second Stage: This begins about the fifth or sixth day and at this time the patient's temperature may fall abruptly to or near normal and jaundice may appear. For this reason this has been called the "icteric" stage; but since jaundice only develops in about half of the cases^{4, 5, 6} it is hardly justified. Those persons who are not jaundiced usually recover rapidly, unless they develop a severe meningitis. During this period the organisms disappear from the blood, appear in the urine, and specific agglutinins and lysins begin to appear in the blood. (Only one non-icteric case has been reported in this country⁴.)

Jaundice is usually easily apparent when present; the icteric index has been reported as high as 325; the etiology of the jaundice is not definitely known. The liver is enlarged; the spleen is usually not palpable. The temperature ranges from 98 to 101 degrees F., but may go quite high. The pulse ranges from 100 to 130. White blood count may remain between 10,000 and 14,000,

although with a falling temperature and rising icterus it may go as high as 30,000. The red count falls some. Bile is found in the urine.

In fatal cases death occurs between the ninth and sixteenth day. The mortality rate is about 30 per cent⁸. In the Charity Hospital of New Orleans, out of 25 proved cases⁹, there were four fatalities. The cause of death varies from renal, hepatic or cardiac failure; toxemia; or as a result of a terminal pneumonia.

Third Stage: This is the convalescent period of the disease and begins about the end of the second week. The temperature falls to normal and the jaundice, if present, begins to diminish. At the beginning of the third week the specific agglutinations reach a diagnostic titer. The convalescence period varies from a week to ten weeks or more; at any time during this interval the patient may have a relapse.

DIAGNOSIS

The clinical picture produced by the leptospira varies and in order to establish a diagnosis it is important to remember the stages of the disease. In the first week the organisms may be seen by darkfield examination of blood; or by inoculation of a guinea pig with blood intraperitoneally the disease may be reproduced and the causative organism may be recovered. It is imperative that the leptospira be differentiated from the *Treponema pallidum*. It may be seen in the spinal fluid.

In the second week the leptospira disappears from the blood stream and then may be found in the urine; the disease may be reproduced by inoculation of a suitable laboratory animal with urine from the patient⁶.

Beginning with the third week the serum from the patient will agglutinate, the leptospira in dilutions that are diagnostic, i.e., in dilutions over 1:300⁴. The presence of antibodies for the typhoid group, brucella, or Wassermann antigen do not cause a false positive. The specific antibodies remain in the blood for years and the agglutinations will remain diagnostic, so that the pre-

existence of the disease in patients with a suspicious past history can be proved. Tiffany and his co-workers examined the blood from 1,351 people, and 10 had reactions positive to a titer of 1:320 or more; eight had a history consistent with leptospirosis, whereas only two had a correct diagnosis made during the illness⁴.

TREATMENT

There are no drugs that are of value in the therapy of this condition; the arsphenamines and sulfonamides do not help. The treatment of choice is immune serum along with supportive measures. If possible, blood from a patient who has recently recovered from the disease is valuable, especially if given during the first week of the disease.

CASE REPORTS

Case 1. R. R., a white male, aged 16 years, was admitted September 19, 1942, and discharged October 22, 1942. On September 16, 1942, the patient suddenly began to have a frontal headache; this was followed by pains in his abdomen, neck and legs, especially in the calf muscles. He became nauseated and vomited several times; his temperature was elevated. On September 18, 1942, some "red spots" developed on his neck. The day of admission the patient had about fifteen loose and watery bowel movements; he complained of fever, headache, and "pain in the stomach." The patient had a sore throat and an occasional dry cough. No chest pain or hemoptysis was noticed. His appetite was very poor and he felt weak.

Past History: No serious illnesses or operations.

Social History: The patient lived in Hope Haven Boys' Home, in Marrero, Louisiana. He drank milk from cows on the place. The water came from the city. No unusual foods had been eaten. Another boy living in the same home had similar symptoms several days before, but was better. (This boy was never located.)

Physical Examination: On admission to the ward, at 8:20 p. m., the patient had the following pertinent findings: Temperature, 103.8 degrees F.; pulse, 130; respiration, 20; blood pressure, 108/56. The patient was a well-developed, well-nourished white male who appeared acutely ill. The pharynx and tonsils were reddened and inflamed. There was no cervical lymphadenopathy, but questionable rigidity of the neck muscles was present. The heart had a regular but rapid rhythm; no murmurs were heard; P2 is less than A2. Occasional crepitant rales were heard over the right base posteriorly. Over the entire abdomen there was slight muscle rigidity that was increased by palpation. The liver, spleen and kidneys were not felt. On the

skin of the extremities, chest and neck rose-colored small spots were noticed; they faded with pressure. The impressions of the admitting physician at the time were typhus vs. typhoid fever, and possible pneumonia. Routine orders were written at this time.

Course: The patient had a fairly comfortable night and the next morning (September 20) the urinalysis was within normal limits. The red blood count was 4,500,000 and the white count 7,700, with 88 neutrophils, 11 lymphocytes and 1 monocyte. Blood, urine and stool cultures were taken; all later were reported negative. Febrile agglutinations (Typhosus "O", "H"; paratyph. A, B; brucella; proteus X 19) were negative 1:20. The temperature ranged from 102.6 degrees to 100.4 degrees. The patient had a "slight stomach ache" that night. The first signs of icterus were noted on September 21. The icteric index was found to be 40. The patient again had some abdominal pain and nausea with vomiting. A chest plate taken at this time showed the heart to be normal, but there were findings suggestive of a diffuse upper respiratory infection and basal pneumonitis. A flat plate of the abdomen was within normal limits. Since the temperature ranged from 98.2 to 101.2 degrees and the diagnosis of pneumonitis was made, sulfadiazine was started. An infusion was given. The sedimentation rate was 50 mm. per hour (Westergren). At this time agglutinations for *L. canicola* and *L. icterohemorrhagiae* were negative 1:10. Blood culture repeated (later reported negative). The next day (September 22) the patient felt better, but had a headache. Temperature fluctuated from 98.6 to 99.2 degrees. Sulfadiazine was discontinued. On this day the Wassermann (Kolmer, Kahn and Hinton) was reported negative. The urine had a trace of albumin, while the red blood count was 4,400,000 and the white blood count 6,500, with 73 neutrophils, 2 eosinophiles, 24 lymphocytes and 1 monocyte. The sedimentation rate was 51 mm. per hour (Westergren). On September 23 the temperature decreased to normal and then rose to 100.2 degrees. Another infusion was given, because the patient was quite nauseated and vomited nearly everything he had taken by mouth. A cephalin flocculation test taken at this time was 3 plus in 24 hours and 4 plus in 48 hours. The erythrocyte fragility was found to be normal. The patient continued to improve and had only slight elevation of his temperature for the next few days. The cephalin flocculation on September 25 was 2 plus in 24 hours and 4 plus in 48 hours. The icterus index was 50 on September 28; at this time febrile agglutinations were negative 1:20, but positive for *L. canicola* 1:100 (negative 1:1000) and negative for *L. icterohemorrhagiae* 1:10. No spirochetes were seen on darkfield examination of urine on September 29. For the first time organisms resembling leptospira were seen on darkfield examination of blood on September 30; this was repeated on several occa-

sions and on October 10 they were seen for the last time. Guinea pigs inoculated with whole blood and urine on September 30 failed to show any lesions grossly or microscopically. No organisms were ever seen in the urine. On October 5 and 9 agglutinations for *L. canicola* and *L. icterohemorrhagiae* were both positive 1:100. The patient was afebrile from October 13 until he left the hospital October 22. He then had no complaints and felt fine. His icterus index at this time was 15. Agglutinations on serum submitted on October 22, 1942, to the National Institute of Health at Bethesda, Maryland were reported as follows: positive 1:1,000,000 for *L. icterohemorrhagiae*, positive 1:1,000 for *L. canicola*. The patient was next seen in the Out-Patient Department on March 25, 1943. At this time he had no complaints and was feeling fine. The following laboratory investigations were performed: red blood count—4,740,000, 95 per cent hemoglobin (14.7 gm.); white blood count—6,500, 57 neutrophils, 4 eosinophiles, 39 lymphocytes. Wassermann (Kolmer, Kahn and Hinton) negative. Cephalin flocculation—2 plus in 24 hours and 2 plus in 48 hours. Urinalysis within normal limits. Agglutinations on serum submitted on March 25, 1943, to the National Institute of Health were reported as positive 1:1,000 for *L. icterohemorrhagiae* and positive 1:10 for *L. canicola*.

Case 2. B. B., a white male, aged 14 years, was admitted on September 27, 1942, and discharged on October 15, 1942. Beginning September 26, the patient had a frontal headache that was preceded by dizziness and "pain in the eyes." This was followed by generalized "stomach ache" but no nausea or vomiting. For the previous few days the patient had a "cold" with a non-productive cough; he had general malaise and anorexia. On the morning of September 27 the patient vomited while at church; he had no nausea. He returned home and went to bed. Then he had a chill and fever. He vomited again in the afternoon and was then brought to Touro where his temperature was found to be 104 degrees F.

Past History: No serious illnesses or operations.

Social History: Same as that for case 1, as both boys lived in the Hope Haven Boys' Home.

Course: On admission to the hospital at 3:30 p. m. the patient appeared acutely ill. His temperature was 104.8 degrees F. and pulse was 100. He was well-developed and well-nourished. There was a slight conjunctivitis present. The throat was diffusely inflamed. The breath sounds were roughened, but no rales were heard. The heart sounds were normal. The area over the liver was tender; the spleen was not palpated. There was some generalized tenderness over the entire abdomen. An x-ray of the chest, taken on the way to the ward, did not show any findings which would warrant a diagnosis of pneumonia. An infusion was given. The red blood count was 5,200,000 and the white

blood count was 10,550, with 69 neutrophils, 1 eosinophile, 1 basophile, 26 lymphocytes and 3 monocytes; the count was repeated the next morning with about the same findings. No malaria parasites were seen. The urinalysis was within normal limits. On the night of September 27 the patient's temperature fell to 99.6 degrees F., but early the next morning it rose to 106 degrees F. After this, for the next few days, it fluctuated between 98 and 99 degrees. An x-ray of the chest taken on September 28 was reported suggestive of a widespread interstitial pneumonitis without gross consolidation; however, since the temperature was about normal, no specific therapy was administered. The main complaint at this time was headache. The Wassermann was negative. Blood culture, stool culture and examination, febrile agglutinations and those for *L. icterohemorrhagiae* and *L. canicola* (September 29) were negative. The sedimentation rate was 21 mm. per hour (Westergren). On October 1 the patient's temperature rose to 104.8 degrees F. and he had a chill. He then had a pain in his right eye that had kept him awake most of the night. Another chest plate was ordered and later reported as being quite similar to the film taken on September 28. A blood culture taken this week was later reported negative. A white blood count showed 8,400 cells, with 81 neutrophils, 5 eosinophiles, 1 basophile, 12 lymphocytes, and 1 monocyte. Sulfadiazine was started, one gram every 4 hours, and was continued for five days, with 24 grams of the drug being given. The patient was seen in consultation by the ophthalmologist, who reported a negative ocular examination; the fundi were normal. An ear, nose and throat consultant failed to find any pathology. However, since the patient lived in the same home with R. R. (case 1), agglutinations for the leptospira were frequently repeated, in spite of the fact that the patient never became jaundiced and was afebrile from October 2 until he was discharged. On October 5 the agglutinations for *L. canicola* and *L. icterohemorrhagiae* were both positive 1:10; on October 8, 9 and 12 the reactions were positive for both in dilutions of 1:100. Febrile agglutinations on October 12 were negative. No organisms were ever seen on darkfield examination of the urine or blood. The patient never appeared jaundiced and on October 12 the icterus index was 4. Serum sent to the National Institute of Health on October 17 was reported as follows: positive 1:100,000 for *L. icterohemorrhagiae* and positive 1:10 for *L. canicola*. The patient was next seen in the Outpatient Department on April 13, 1943, at which time the physical examination revealed no abnormal findings, and there were no complaints. The following laboratory work was performed: Urinalysis within normal limits; red blood count 4,660,000, 71 per cent hemoglobin (11.2 gms.), white blood count 5,500, with 65 neutrophils, 4 eosinophiles, 29 lymphocytes, 2 monocytes; cephalin flocculation was 3 plus in 24 hours. The febrile agglutinations

were negative and those for *L. icterohemorrhagiae* and *L. canicola* were both negative 1:10. Serum sent to the National Institute of Health on April 13 was reported as being positive 1:1,100 for *L. icterohemorrhagiae* and positive 1:100 for *L. canicola*.

SUMMARY

These two cases have been presented in detail for the purpose of comparing different clinical syndromes produced by the leptospira. In both cases the causative organism was more than likely the *Leptospira icterohemorrhagiae*.

Emphasis is to be placed on the fact that the clinical syndrome should be referred to as "leptospirosis" and no classic name applied, because it may be misleading. This is especially true when referring to this syndrome with the term "jaundice" in the name, because, as has been pointed out, only about half of the cases are ever jaundiced. Also, it may be misleading to use the term "Weil's disease," because this refers to a specific disease that is caused by the *Leptospira icterohemorrhagiae* and jaundice is expected to be present in the classic case.

Finally, it is to be emphasized that the diagnosis may be made only after careful and thorough laboratory investigation. Because this has not been thoroughly done, many cases have never been diagnosed.

REFERENCES

1. Musser, J. H.: Internal Medicine, Lea and Febiger, Philadelphia, 1938, p. 251.
2. Noguchi, H.: Nomenclature of *Leptospira Icterohemorrhagiae*, J. Exp. Med., 27:575, 1918.
3. Wardsworth, A., Longworthy, V., Stewart, C., Moore, A., and Coleman, M.: Infectious jaundice occurring in New York state, human leptospirosis from a rat, J. A. M. A., 78:1120, 1922.
4. Tiffany, E. J., Martorana, N. F.: Immunity, leptospirosis (canicola) in New York City: serologic survey, Am. J. Hyg., 36:195, 1942.
5. Stitts: Diagnosis, Prevention and Treatment of Tropical Diseases, Vol. 1:357-379, 1942.
6. Ashe, W. F., Pratt-Thomas, H. R., and Kumpe, C. W.: A complete review of American literature and an abstract of the world literature, Medicine, 20:145, 1941.
7. Larson, C. L.: Weil's disease: A report of 51 cases occurring in Puerto Rico and the United States, Pub. Health Rep., 56:650, 1941.
8. Koppisch, E., Suárez, R. M., Kohlschutter, E., and Hernandez, M. F.: Weil's disease in Puerto Rico: Report of five cases, one of them with postmortem findings. Puerto Rico J. Pub. Health & Trop. Med., 17:305, 1942.
9. Senekjle, H. A. (Tulane University, Dept. of Tropical Medicine; Paper to be published).

URTICARIA PRODUCED BY POISONOUS CATERPILLARS

VINCENTE D'INGIANNI, M. D.
NEW ORLEANS

Urticaria due to members of the Lepidoptera order is of importance to medical science; especially urticaria caused by the caterpillar, an occasional epidemic of which brings the subject to the attention of the profession and laymen alike. However, if one were to judge by the number of cases reported in the literature, it would seem that such injuries were rare. Nevertheless, let us examine the historical side of this subject and learn when such cases were first reported, by whom and where.

The credit for being the first to report on the subject goes to Pagenstecher, who, in 1883 at the Congress of Heidelberg, presented preparations of a conjunctiva and an iris covered with lesions caused by caterpillar hairs. The nodules bore a great similarity to tuberculous follicles. Soemisch, following Pagenstecher, was the first to name ocular lesions caused by caterpillar hairs—*Ophthalmia nodosa*.

Closely upon Pagenstecher's observations came those of Wagenmann in 1890, Borel in 1891, and Kruger and Becker in 1892. In 1894 Hilleman became interested in the subject and recalled ten previously published cases, to which he added another dealing with direct contact of the caterpillar and the eye of the patient. It remained for Packard in 1894 to make the first step toward explanation of urticaria.

Just after Hillman's report there appeared those of Elschinig and of Lawford in 1895; then a case from Natans in Russia in 1897. Interest in the subject was rising and now and then a case appeared.

Valude, in 1905, presented a very interesting case in which vision was totally inhibited for three days, and quite bad for about three weeks. The eye was red, swollen, and tumified, and the inflammation persisted several months. Upon observation the tiny caterpillar hairs were found.

Two cases, so-called *ophthalmia nodosa*

by their author, were caused by a bee sting and a grasshopper's antennae.

Nineteen hundred and eight, 1910, 1912, 1917, 1918 brought more cases with special attention to the migration of the hairs and the persistence of pain until the hairs were removed.

Macotty in 1922 reported a case in which not only the eye but the eyelids and the skin of the forehead were affected. He showed the remarkable vibratility of the hairs, even through resistant tissue; for those hairs on the forehead penetrated as deep as the periosteum of the frontal bone.

In a case reported by Krausse in 1925 several hairs were removed, but others, lost sight of, caused a recurrence of the infection seven years later.

West in 1931 studied cases affected by the caterpillar, *Euproctis chrysorrhoea*. He claimed the infection was due, not only to the foreign body in the eye, but also to a toxin borne on the hairs. However, after admitting that the toxin referred to was readily soluble and easily neutralized by the organism, the author was forced to agree with his predecessors that the mechanical action of the hairs themselves was responsible for the long persistence of the irritation.

PATHOGENESIS

The caterpillars causing the majority of urticaria in the United States can be found among the following list, which is taken from Matheson:

Megalopygidae:

Megalopyge crispata (Flannel moths);
Northern United States.

Megalopyge opercularis (Puss caterpillars); Southern United States.

Megalopyge pyxidifera (Flannel moth); Southern United States.

Norape ovina (Cerama Cretata);
United States. (As far as known all caterpillars of this family possess urticating hairs and the species is numerous in South America).

Eucleidae (Limacodidae):

Sibine stimulea (Saddle-back caterpillars); United States.

Parasa chloris; United States.

Parasa indetermina; United States.

Phobetron pitchicum; United States.

Adoneta spinuloides; United States.

(Numerous species in tropical regions of both hemispheres possess urticating properties of varying intensities).

Lymantriidae (Liparidae):

E. Phaeorrhea (Brown-tail moth); Europe and United States.

Arctiidae:

Euchaetias egle; United States.

Noctuidae:

Apatela populi, and *A. oblinata*; United States.

Catocala sp.; United States. (Effects from the larvae probably very insignificant except on the most delicate skin).

Saturniidae:

Automeris io. (The Io moth); United States.

Hemileuca mais; United States.

Hemileuca lucina; United States.

H. oliviae and *H. nevadensis*; Western United States.

Pseudo eglanterina and *P. Hera*; Western United States.

During the summer and early spring these caterpillars are found in great numbers on the particular leaves they are adapted to—usually trees. In certain parts of Texas these urticating caterpillars were so numerous that they were causing the death of trees.

It has been stated that epidemics of urticaria have followed the consumption of water from a well over-hung by a tree infested with caterpillars. Others have stated that these larvae are able to throw off spines when one comes near them. Wagenmann attributes an extensive epidemic of nodula conjunctivitis due to the transportation of hairs by the wind. The *Euproctis chrysorrhea* or brown tail moth is the greatest offender of this group. There is one report of a death due to the inhalation of hairs.

The most troublesome of these are the larvae of *Euproctis chrysorrhea* (brown

tail moth), *Lagba crispata*, *Hemileuca maia* (buck moth), *Sibine stimulea* (saddle back), *Automeris io* (Io moth). These larvae are toxic from the moment they hatch (Gilmer).

It would be interesting to establish here a definition of toxic animal. Biologically one may designate an animal as poisonous only when this toxicity represents a trait of a given type of animal; in other words, when such poison is periodically developed in his body. These genuinely poisonous animals may be divided into two sub-groups: (1) the actively poisonous animals, the toxicity of which is dependent on an anatomically defined apparatus wherein the poison is contained, and (2) the passively poisonous animals, the toxicity of which is the sequel of the chemical make-up of their various tissues and organs. The lepidoptera-caterpillars belong to the group of actively poisonous animals in that their toxicity has been proved to depend on the effect of a poison apparatus, the irritating hair.

ETIOLOGY

Since the subject, urtication caused by caterpillars, was thought of, the exact mode of causing the urtication has rested between several conflicting schools: (1) due to the hair itself (mechanical); (2) due to toxin glands; (3) due to combination of above ideas. It seems that each succeeding attack is more severe. This makes one think there may be an allergic mechanism at work.

These facts are known and seem to be confirmed by men working in different laboratories: (1) Handling droppings from the caterpillar will cause urticaria; (2) cocoon inhabited by urticating caterpillar has given rise to typical skin reaction as associated with caterpillars; (3) moths at times will cause urticaria; (4) these urticating caterpillars possess two distinct kinds of hairs. The first three can be understood by explaining the last point; if the hairs are responsible then the droppings, the cocoon, and the moths also will carry some of the offending hairs. Since the caterpillars are covered with two distinct kinds

of hair it would be well to know how they differ.

The following table is a comparison of their qualities:

	Long Hairs	Short Hairs
Number	12-30	8-10
Length	5 mm-7mm	2 mm-3mm
Thickness	0.2 mm-0.5 mm	0.5 mm-1.75 mm.
Shape	Uniform	Serrated or barbed
Compressability	None	Yes
Pointing direction	Changeable	Permanent

These short hairs are well hidden by the long ones and are located near the apex of the papillae. Experiment proves them difficult to dislodge in comparison to the long ones; although Kephart states the contrary. These tubercles covered with toxic hairs are so located that when the animal is irritated he can arch his body and bring this defense mechanism into contact with the offender.

Careful examination of a forceps and glass rod after passing them over the hair did not reveal any hair on them. The short hairs may have various shapes but are markedly irregular in outline. The tips are angulated or possess several barbs and are easily broken off from the shaft. When these tips are broken off while observing them under the microscope and binocular (living caterpillars being used) no exudate was ever observed to ooze out of the tips.

That the hair is responsible for the disease and not the actual biting of the caterpillar can be proved by handling the drop-pings and emptied cocoon; deliberate contact with the hair has given rise to typical urticaria. To identify which hair is responsible deliberate irritation of the skin with both hairs has been tried; it is unanimously conceded that the short ones are responsible.

HISTOLOGY OF SHORT HAIRS

There have been few thorough investigations of the histology of the venom mechanism, and there is a great deal of confusion and disagreement among research workers. To a great extent the confusion seems to be arising from the fact that these workers are looking for something they think exists instead of interpreting what they find.

When Packard (1884) began delving into the question of histology, he demonstrated that in the base of the short hair of the *Logoa crispata* is a cell to which he attributed the production of toxin. A few years later Inginitzky studied the *Ochneria manacha* and demonstrated the presence of two cells connected to the toxic hair. One cell is for the production of hair, and later becomes a vestigial organ; the second persists and remains connected to the base of the hair. This cell he says is the toxogenic cell. These developments were traced through the embryonic stage.

Kephart concluded from sections of the brown tail moth that the hypodermis is found to be greatly thickened in the region of the subdorsal and lateral tubercles. The hair is the result of out-growth like that of human development. However, the base of the shaft is hollow. The poisonous cells are said to be beneath these hollowed portions and crowded together. These may be groups of concentrated cells supplying the entire tubercle; that is, from a common pore from the toxogenic cells there is a division of the duct so that each papillae is reached through the same pore canal, and sends branches to each hair on the papillae.

The hypodermis is composed of two layers of cells—a compact lower layer of small cells with dark staining nucleus and a small amount of cytoplasm. The upper row is composed of large cells that have large vesicular nuclei. It is this row of cells that lie beneath the hollow portion of the hair and sends pores to each papillae and then to each hair—a cell for each hair. These are apparently the hair forming cells or trichogenic cells. The first row does not send filaments to every cell as the second row. Since not all hairs are toxic, this may indicate that the first row is not trichogenous but toxogenous.

Foot, working with *Megalopyge Opercularis*, finds the seta to be hollow and with its tip broken, the opening being plugged with a mass of pigment. The base of the shaft is expanded into a shell. At the base of the shell there are two nuclei with much the same staining properties as the ex-

panded structure. The function of these cells has not been determined, but because of their similarity, they are said to be associated with seta root. Leading from this structure downward there is an indefinite staining structure not found in connection with all cells.

Just at the construction of the base of the shaft, Foot finds a diaphragm which is traversed by a duct from the contents of the seta shell—called theca or poison sac. The sac is thinly walled and on its surface sparingly distributed are a few flattened nuclei with no definite cellular position. As the duct ascends to the top of the shaft it becomes thin and very difficult to demonstrate.

Connected with the hair root through upward spiraling ducts are "gland like organs"; this simulates the sweat glands of the human. They never connect with ornamental hairs but occasionally with a poison seta. Foot believes that they might be toxogenic and transmit toxin to the theca and then atrophy occurs. If this is so then why does not all poison plumage have such connective glands? Villard believes that all poison seta have such connecting glands which first produce the hair (trichogenous), later secrete toxin (toxogenous).

There is no definite statement made by Foot as to whether he has been able to show a pore at the distal end. However, he says the one examined was plugged with pigment; this may have resulted from a fracture.

TOXICOLOGY

Concerning this phase of the study of urticating caterpillars it may be said that very little or nothing is known; although some workers contend that certain facts have been established.

Kephart published some facts which he observed; however, it was not possible to duplicate them. He observed that the introduction of toxic hair into the blood would cause the crenation of red blood cells first into coarse particles, leaving only the sphere through which light is refracted. Other hair and foreign bodies do not cause such reactions.

In twenty attempts I could not observe this phenomenon regardless of method employed. Citrated blood was placed on a slide in focus, then the hair was introduced. This was observed for ten minutes and longer intervals; then fresh blood was used. The blood was placed on a cover slip surrounded by vaseline and a hair was placed on it. This was placed quickly down on a slide. Defibrinated blood was used as in the first experiment. In neither of the above was the phenomenon of gradual crenation observed.

CONCLUSION

Any conclusion drawn as to the method by which these larvae cause urticaria, except as acting as a foreign body, would be at the present time an assumption.

The so-called toxic hair when introduced into blood does not cause crenation of the cells.

The hairs are difficult to dislodge.

At no time was there observed any exudate from the tip of the broken hair.

BIBLIOGRAPHY

- Beyer, Geo. E.: Urticating and poisonous caterpillars, Quarterly Bulletin, La. State Board of Health, 13:161, 1922.
- Buchmann, W.: The toxicity of hair of Lepidoptera-caterpillar, Ztschr. f. Desinfekt. u. Gsndhtson, 20:203, 1928.
- Cheverton, R. L.: Irritation caused by contact with the processionary caterpillar (larva of *Thaumetopoea Wilkinsoni* Tams) and its nest, Trans. Roy. Soc. Trop. Med. & Hyg., 29:555, 1936.
- Cleveland, B.: A case of acid poisoning with sloughing of part of the esophagus, M. J. Australia, 1:170, 1920.
- Cleveland, B.: Papulo uricarial rashs caused by the hairlets of caterpillars of the moth, M. J. Australia, 1:169, 1920.
- Escartefigue, M. M.: Toxidermie a caracteres epidemique provoque par la processionnaire due pin; Buletin de la Societe franchise de dermatologie et de syphiligraphie 1932.
- Gelmer, P. M.: Poison and poison apparatus of the white-marked tussock moth *hemerocampa*. *Leuostigma* Smith and Abbot. J. Parasitology, 10:80, 1924.
- Foot, N. C.: Pathology of dermatitis caused by *Megalopyge opercularis*, a toxic caterpillar, J. Exper. Med. 35:737, 1922.
- Goodwin, T.: Caterpillar bite (*Megalopyge Opercularis*), J. M. Assn. Georgia, 26:157, 1937.
- Kephart, C. F.: Poison glands of the larva of the brown tail moth, J. Parasitology, 1:95, 1914.
- Lillington, Claude: The clothes moth, Hygeia, February 1935.
- Matherson, R.: Medical Entomology, Charles C. Thomas, 1932, p. 449.

THE PHYSICIAN'S ROLE IN INDUSTRIAL HYGIENE*

J. G. TOWNSEND, M. D.†
BETHESDA, MD.

The physician on the Federal level, on the State level, in industry, and in private practice all bear a share in the responsibility of keeping the worker healthy and on the job. Theirs is the knowledge that can interpret health in terms of industrial health, that can show the relation between the physical well-being of workers and the number of finished products rolling off the assembly line. The role is vital because keeping workers healthy and on the job means that our fighting forces will be supplied with the arms and ammunition they need. And keeping workers healthy and on the job depends upon prevention of illness as well as medical care itself. It means preventing the common respiratory infections as well as bandaging the smashed thumb.

To prevent illness and accidents in industry, as well as to provide for medical care in the face of rapidly expanding production, our industries everywhere need more full-time and more part-time industrial physicians. In very few of the small plants are any medical services offered. Even part-time industrial physicians and nurses are the exception—not the rule.

A preliminary study of industrial hygiene problems in 15 States made in 1939 showed that only 15.5 per cent of the workers in 16,803 plants surveyed in these 15 States had access to a full-time plant physician. A part-time physician served 22.3 per cent of the workers. To 33.3 per cent a full-time nurse was available, and to 1.5 per cent a part-time nurse was available.

Perhaps the fact that two-thirds of the nation's industrial workers are employed in small plants where there is no medical service whatsoever was not so significant before the war when industry could recruit the

"cream of the labor crop" from an ever plentiful supply bin of manpower. Perhaps it was natural under such conditions that management displayed little concern about the worker's private life—that is, his home, his habits, and his attitude towards his work. Labor, on its part, probably would have resented and labeled as paternalistic any effort by management to assist in dealing with these problems. Labor was more concerned with obtaining concessions regarding hours and wages, more liberal compensation laws, and seniority privileges. Few, if any, realized that some form of medical care, if only on a part-time basis, would more than pay for itself.

Nevertheless, for those of us who had been associated with this work over the last two decades, it was evident that great strides had been made and were being made in the improvement of the working environment. Perhaps the most significant advance was the establishment of governmental industrial hygiene services, to assist industry and the professions in a number of States. This, of course, was made possible by allocation of Federal funds by the Public Health Service, under the provisions of the Social Security Act.

Just about the time when we were becoming complacent about our achievements, along came the war and changed the entire picture in such a revolutionary manner that our previous difficulties now appear to have been slight. However, just as national crises entailing social and individual hardship usually result in progress which otherwise would have been retarded or not achieved at all, so we may expect that the influence of war upon industrial hygiene will result in great gains to all concerned.

I do not need to tell you about the influence of war on the medical service you yourselves are able to give your patients in civilian communities. The armed forces have drawn off so many of the medical men that in some communities medical care and public health service, as we knew it before the war, is almost an impossibility.

However, let us note that in arranging an orderly withdrawal of physicians, the Directing Board of the Procurement and

*Presented before the Seventh Annual Meeting, New Orleans Graduate Medical Assembly, New Orleans, Louisiana, March 15, 16, 17, 18, 1943.

†From the Division of Industrial Hygiene, National Institute of Health, U. S. P. H. S., Bethesda, Maryland.

Assignment Service of the War Manpower Commission has stated that "a physician should be considered essential to civilian public health interests and therefore, not available for military duty provided he comes within one of the two following categories:

"One: a full-time medical officer in charge of a health service of a governmental unit or administrative district, such as State, district, county, and city.

"Two: full-time heads or chiefs of administrative units within a health department. For example, tuberculosis, venereal diseases, maternal hygiene, infant care, epidemiology, or vital statistics."

The Board of the Procurement and Assignment Service has also ruled that physicians employed in industry are essential under certain conditions:

A full-time industrial physician employed by an industry which is manufacturing war materials exclusively or under priority ratings, is deemed essential. The same applies to a physician giving his full time to the industry, or 40 or more hours weekly, and has been so employed for at least two years, or one who is especially trained for industrial hygiene and is carrying on an acceptable health maintenance program.

The physician who is performing the functions of a medical director or department head or a specialist, or one who is the only physician employed, is also deemed essential. Assistant physicians who perform routine functions under direction, and are employed on a full-time basis are deemed essential until they can be replaced within a reasonable time, which is regarded as three to six months.

A physician serving a State industrial hygiene bureau on a full-time basis is also considered essential by the Board of the Procurement and Assignment Service. A part-time industrial physician, serving part-time two or more industries engaged exclusively in the manufacture of war materials or under priority ratings, is deemed essential if his total part-time service is the equivalent of 40 or more hours weekly. A

physician who serves on call only is not deemed essential.

In addition to the necessity of keeping in industry the physicians who are already there, and the need for placing more physicians in war plants, we must make some provision for training industrial physicians. Many States have already set up two- and three-day institutes for special industrial hygiene training. Other States have organized three-week courses in industrial medicine.

Last year a group of dermatologists was given intensive training at the National Institute of Health under Dr. Louis Schwartz of our Division. This year a similar course was conducted by Dr. Schwartz in Chicago in cooperation with the American Medical Association.

Many State and local medical societies, through their committees on industrial health, have been active in the field of industrial health. These committees, affiliated with the Council on Industrial Health of the American Medical Association, are developing programs and setting up standards for medical practice in industry. For example, in one State, cooperative programs for the promotion of medical examinations in industry are being launched under the auspices of the Committee on Industrial Health of the State Medical Association, with similar committees in the local societies. In several other States, the committees on industrial health of the State medical societies, in cooperation with other health agencies, are sponsoring industrial hygiene institutes for private and industrial practitioners.

Some idea of the broadening scope of industrial medical practice may be found in a comparison of the pre-war functions of the industrial physician with the current concept of his duties and responsibilities.

As I have said before, there were not enough full-time medical directors in industry before the war. However, many part-time physicians were employed to come into plants for a half-day or an entire day each week to supervise the treatment and injuries incurred on the job.

In many plants, physicians were on call when accidents occurred, or when it was necessary to examine a person with a suspected occupational disease so as to advise management if compensable.

The pre-war concept of industrial medical service was concerned with one responsibility—emergency first aid treatment of injuries. Even in plants with complete medical service was this true. In few cases did the industrial physician concern himself with the common ailments which caused by far the largest amount of disabling illness.

With the coming of war, industry became conscious of conserving manpower chiefly because of its scarcity. Industry began to be aware that in terms of sick absenteeism the total health of the worker was more important than accidental injuries on the job.

Moreover, war has established a tremendous industrial development in areas not prepared to render any kind of medical service whatsoever. Many large plants literally rose up in cornfields. Boom towns arose with practically no medical service at all. Oftentimes towns of one and two thousand increased to 5,000 and 10,000 with no corresponding increase in the number of physicians. Everywhere, but especially in strategic industrial areas, medical care has become a necessity, for manpower must be conserved and production kept going.

The industrial medical service of a plant will usually be under the supervision of a medical director, assisted by nurses, dentists, technicians, clerks, and other part-time or full-time assistants. The medical service will give emergency care to employees who are injured or become ill on the job. It will be responsible for the continued treatment of employees suffering from occupational disease or accidents.

It is the responsibility of the medical service to inspect health and accident hazards in the shops in cooperation with the safety department, engineering department, or other unit, in order to prevent occupational disabilities.

An annual periodic examination of all employees and executives is one of the important functions of the medical service. It

is intended to help them improve and maintain health through the discovery and correction of ailments of which they may not be aware but which later may impair their health seriously. Monthly physical examinations, including laboratory tests, should be made of workers who are exposed to poisonous materials on their jobs. Workers with unusual responsibilities, such as crane-men and hoistment, should be examined every six months.

The medical service will be responsible for the replacement examination of all workers. In cooperation with the personnel department, employment office, or other responsible unit, workmen should be placed in jobs best suited to their individual capacities. The objective of the preplacement examination is to utilize every available worker. In no instance should it be interpreted as a means of rejection of handicapped persons.

It is advisable for the preplacement examination to include complete medical and occupational history, complete physical examination, test of eyesight, blood pressure reading, laboratory analysis of urine, blood count, blood test for syphilis, x-ray picture of the chest to detect tuberculosis, especially of applicants whose physical examination suggests the possibility of tuberculosis. One-eyed workers, and many applicants with handicaps such as hernia, high blood pressure, defective vision or hearing, and crippling conditions should be employed and placed by the physicians and employment office at jobs they can do efficiently and safely. Applicants found infected with syphilis should be employed providing their disease is in a non-infectious stage, that they have no other disqualifying complications, and that they remain under treatment.

Maintaining and analyzing sickness records in order to know how, when, and where lost time due to disability occurs in the plant is another function of the medical service. A further important duty is to promote and take part in a health education program for employees and their families.

The medical service should also work out in advance detailed plans for handling large

numbers of seriously injured workers in event of disaster such as explosion, fire, air raid, or other enemy action. Such plans will include transferral of injured to hospitals where operating rooms, blood plasma and blood donors are available, first aid care of injured, and coordination of these plans with the safety department, guards, police, road patrols, and fire departments.

The industrial physician's "office" is the plant dispensary. The facilities which are available will vary from plant to plant. But to give adequate service the dispensary should be large enough to allow emergency treatment of the injured and sick, laboratory tests, and privacy in making physical examinations.

Every plant should have at least one first aid or stretcher crew, composed of interested employees. The crew may be trained by the medical service, a trained safety engineer, or a first aid teacher with a Red Cross certificate. The first aid crew works under the supervision of the medical service and the safety committee.

The plant medical service will be especially valuable in communities which are feeling the shortage of doctors and nurses. In a great many cases, the shortage is more apparent than real. People are likely to get upset and panicky when they discover that their family physician has gone to war or they cannot get a private duty nurse. Here the leadership of the industry can manifest itself, for very often this sense of deprivation can be relieved promptly if some responsible community organization immediately makes certain facts known to the public: first, what the local situation is; second, where alternate medical and nursing services may be found, and third, how to obtain the health, medical, and hospital service.

It is part of my job to travel extensively throughout the country in order to confer with the responsible agencies and organizations concerned with the conservation of manpower. Everywhere I have gone I have heard, as you have heard, one question: "What can *I* do about it?"

As physicians, whose training and skill

are as basic to our civilization as the food and water which sustain us, there is a great deal you can do. To a certain extent that question is now being answered. The younger members of our profession are going into uniform. Many of the older physicians are returning to hospital and teaching staffs, and even to private practice. It is the middle-aged doctor on whom the greatest responsibility will rest. And yet, paradoxically, these middle-aged physicians are the ones who tell me most often that, as they read the daily headlines, they wish for the opportunity for a more concrete participation in the war.

Here is the answer to that question. It is an answer which will satisfy the physician who is the patriotic citizen, and a scientist spurred by the everlasting spirit of inquiry which reaches beyond Hippocrates back to antiquity. The opportunity which awaits every physician who is not in armed service is that he shall bring to the industrial plant the skills of his personal office; and, conversely, he must bring to his personal office the industrial knowledge of medicine for which there is so urgent a need.

The necessity for obtaining an accurate and detailed occupational history cannot be stressed too strongly. Many a conscientious physician has taken pains to record the detailed personal and past medical history of a patient, and neglected to get information concerning the patient's exposure to toxic materials in industry. Such an occupational inquiry might result in the need to investigate the patient's working environment, or at least to get information from plant officials on this point. As a single example of the advantage of a detailed occupational history, a recent investigation by the Public Health Service indicates that manganese poisoning may often be mistaken for multiple sclerosis or Parkinson's disease.

Whether you are a private practitioner or an industrial physician (and it seems both functions will have to merge, to meet the need) your prompt reports of the occurrence of occupational diseases are vital

to the efficient functioning of your official health bureaus. State-wide, careful attention to such reporting builds up a "backlog" of industrial epidemiologic data which may prevent the recurrence of such diseases.

Our country is indeed fortunate in having the largest reservoir of medical manpower among all the nations at war. The existence of this priceless resource does not by any means solve the acute medical care problems in many of our extra-cantonment and war industrial communities. The real problem lies in the *distribution* of our medical forces. For that reason, we are concerned with the removal of every obstacle that prevents or delays the relocation of physicians to communities where they are sorely needed. We are concerned also with the maximum utilization of the physician's services, saving him from unnecessary wear and tear, and helping him whenever possible through joint planning with other physicians and hospital groups. If necessary, new methods may have to be developed for maintaining necessary medical care services.

A realistic program of industrial hygiene must face the fact that 90 per cent of the disability among our war workers is due to nonindustrial accidents and illnesses. Therefore, in planning industrial health services several factors should be taken into account. For example, if a physician is needed in one plant, the community from which he is recruited must be considered in order that an essential physician not be withdrawn from general medical service in the civilian population. An in-plant health service should also make full use of community medical and health facilities. State and local public health services, including the tuberculosis and venereal disease control programs, are available to any industrial health program. The plant should also consider extending to the workers and their families, if possible, established group medical service plans, such as have been developed by many State and local medical so-

cieties. The Blue Cross* hospital insurance associations, established in numerous States and industrial communities, could also be promoted among the workers.

In the face of a dwindling supply of civilian physicians, it is unlikely that more than a fraction of the small plants will be able to obtain the full-time service of a physician. There are several plans now in operation whereby two or more small plants have obtained medical service by cooperative arrangements with State and local medical societies and governmental industrial hygiene services. The Public Health Service is cooperating with the American Medical Association in extending the adoption of such plans by small industries.

Your State industrial hygiene service can provide consultation on the toxicity of materials and processes, control of environmental hazards, occupational diseases, and general industrial illness; their laboratories are available for both clinical and environmental investigations. In every State where the policy has been adopted, the appointment of a physician from the State industrial hygiene bureau as a member of the State Medical Association's Committee on Industrial Health, has established a highly effective bridge of communications. And, in turn, this Committee makes an ideal liaison channel between the Association and the Bureau of Industrial Hygiene. Let me add that I mean the phrase "liaison channel" to refer to a "two-way street", with ideas, suggestions, and cooperative projects flowing in both directions.

The personal physician, for his part, can sharpen the tools at his command. He can and should make the use of accurate and detailed occupational histories standard practice. He can and should use the pre-employment examination as a *preplacement* method. He can and should increase his familiarity with occupational diseases, their causes and control, and give the reporting of such illness the same care he gives communicable disease.

The physician who efficiently handles a case of occupational disability saves a working skill as well as a man. Such medical

*Eleven million, seventy thousand members—January, 1943.

efficiency and such rescued skills, together, multiplied by thousands each month and transformed into endless numbers of war weapons, demonstrate that the private medical practice can be as much a part of front-line combat as accurate artillery.

In the contest of war there is only a first prize. Whoever wins second prize, loses.

If the contribution the medical profession is making, and will be called upon to make, is any measure of America's all-out effort to win, victory is as sure as tomorrow's sunrise.

—o—

THE PHYSIOLOGIC ACTION OF CORTICAL EXTRACTS AND DESOXYCORTICOSTERONE

CHARLES M. WILSON, M. D.
NEW ORLEANS

Ever since the description by Thomas Addison, in 1849, of the disease which bears his name, it has been appreciated that the adrenal cortex occupies a position vital to the normal metabolism of the body. But the exact nature of the hormones of the cortex and their modes of action is a subject that has been shrouded in mystery until relatively recently. Within the past two decades the bulk of our knowledge has developed concerning these hormones; one of them, desoxycorticosterone, has been synthesized and the crude extract has been separated into many fractions in the laboratories of Wintersteiner, Reichstein, Kendall, and others. As early as 1928, Rogoff and Stewart¹, and Hartman² were able to demonstrate that active adrenal cortical extracts were capable of prolonging life in adrenalectomized animals. Since then, many separate and distinct fractions have been isolated and proved to have individual and distinctly different effects. It is the purpose of this paper to discuss the nature of these effects.

HORMONES OF THE ADRENAL CORTEX

Kendall³, in a recent article, lists eleven steroids of the corticosterone series of known formula. In addition to these, the adrenal cortex is known to contain desoxy-

corticosterone, progesterone, estrone, and certain androgens. Four of the corticosterone series deserve special mention. These have been designated by Kendall as A, B, E, and F; all four possess an oxygen atom on C-11, in contradistinction to desoxycorticosterone which does not. It is due to the ketol structure on C-17⁴ that these cortical hormones are capable of maintaining life in animals after adrenalectomy. Progesterone possesses such a group and has been shown to be capable of prolonging life in these adrenalectomized animals⁵.

In addition to these isolated fractions, there still remains in the mother liquors from which these extracts are made, an amorphous substance which retains the major portion of the total activity of the crude extract. The amorphous concentrate, though still impure, is adequate for an adrenalectomized dog when administered daily in the amount of 1 microgram per kilogram of body weight. To achieve the same result, fifteen times as much desoxycorticosterone, and 100 times as much corticosterone are required⁶.

PHYSIOLOGIC ACTIONS OF THE ADRENAL CORTICAL HORMONES

The quantitative investigation of the physiologic response to the several compounds separated from the adrenal cortex clearly shows that no one compound can produce all of the human effects of the extract. For gluconeogenesis and the efficiency of muscle, corticosterone and compound E and their derivatives with oxygen on C-11 are necessary. For the most marked effect on the distribution of electrolytes, desoxycorticosterone is required, and for the maintenance of normal renal function the amorphous fraction is the most efficient⁷.

Effect on water balance and electrolytes: Water constitutes about 70 per cent of the body weight and may be thought of as existing in three compartments⁸: (1) Intravascularly: the plasma water is about 5 per cent of body weight; (2) in the interstitial spaces: about 15 per cent of the body weight is represented here; (3) intracellularly: about 50 per cent. While the plasma water volume is the least of the three, the

body seems to have the highest regard for its constancy, and anything which tends to alter this volume is met by counteracting changes in the interstitial and intracellular compartment. These changes are to a large extent regulated by the hormones of the adrenal cortex.

Adrenalectomy renders the kidney incapable of retaining sodium and of excreting potassium. The cause of this is not known, but the fault does not lie exclusively with the kidney. Perhaps it is a manifestation of a generalized alteration in membrane permeability. At any rate, the sequence of events seems to be as follows: The increased excretion of sodium (usually in the form of sodium chloride) is accompanied by a diuresis (saline diuresis), as originally shown by Loeb.⁹ The concentration of sodium and of chloride in the serum and in the interstitial fluid drops to low levels. This causes a decrease in the osmotic pressure of the extracellular fluid with the result that water flows into the cell. Water accumulates within the cell at the expense of the volume of fluid in the interstitial fluid and in the plasma.^{10, 11, 12} This results in decreased blood volume. Cellular hydrops and hemoconcentration is the picture. Concomitantly, and probably due either to increase in the cell membrane permeability or to an attempt on the part of the cell to adjust to the depletion of extracellular electrolytes,¹³ the intracellular potassium ion is released and rises to relatively high levels in the blood. The blood urea is increased due to damage to the cells and disintegration of cell proteins.¹⁰ The water loss from the blood, both because of the diuresis and the diffusion into the cells, is not solely, however, a function of the electrolytic imbalance. This was shown by Swingle¹⁴ who showed that in adrenalectomized dogs revived from severe deficiency but maintained on a low salt diet, the shift of the water from the cells into the blood stream could take place in the face of critically low serum sodium and chloride levels. Swingle regards control of membrane permeability an important function of the adrenal cortex, and is given support by the work of

Menkin¹⁵ who showed that the increase in membrane permeability caused by an inflammatory exudate (leukotoxin) could be reduced by adrenal cortical extracts (but not by desoxycorticosterone). Fine and Fischman¹⁶ do not agree, but the value of their argument is somewhat attenuated by the fact that they draw their conclusions from experiments with the use of desoxycorticosterone rather than cortical extract. Transfused serum in animals suffering from acute adrenal insufficiency does not maintain the rise in blood pressure, but promptly leaks from the vascular system unless adrenal cortical extract is given.

Effect on carbohydrate metabolism: In addition to the above effects on water and electrolyte balance, profound changes in carbohydrate metabolism occur following adrenalectomy. There is a hypoglycemia and a marked depletion of liver glycogen. The exact mechanisms involved are not known. That the carbohydrate metabolism is dependent to some extent on the electrolytic and water balance is demonstrated by the fact that adrenalectomized animals can be maintained very satisfactorily, with regard to both the blood sugar and the liver glycogen, on a diet high in salt and water, even in the absence of adrenal cortical hormone (Anderson and Herring¹⁷). However, these animals are peculiarly susceptible to stress, and such things as mild tapping on a muscle or a sudden change in environmental temperature may precipitate hypoglycemia and shock.¹⁸ There is a specific action of the adrenal cortical hormones on carbohydrate metabolism which is demonstrated in a number of ways. It is demonstrable that adrenal cortical extracts in the perfused liver will cause an increase in glycogen storage, and that an increased amount of glycogen is stored in the livers of normal fasting or partly depancreatectomized rats when cortical extract is administered.^{19, 20} Adrenalectomized dogs show an increased sensitivity to insulin, as shown by Lewis;²¹ normal dogs tolerate 0.25 units of insulin per kilogram of body weight, but severe convulsions and hypoglycemia occur when such a dose is given to adrenalectomized

animals. Any of the cortical hormones containing an oxygen attached to C-11 will protect the animals from hypoglycemia and convulsions.²² Desoxycorticosterone affords no protection against insulin. Ingle has shown that severe hyperglycemia and glycosuria can be produced in rats fed a high carbohydrate diet; and adrenalectomy alleviates a pancreatic diabetes in experimental animals as evidenced by a decreased urinary nitrogen and glucose excretion.³⁰ Bits of evidence such as these leave no doubt but what there is a specific action of the adrenal cortical hormones on carbohydrate metabolism.

Growth: Adrenalectomy retards growth.²³ This is especially well shown in young animals. Paradoxically enough, however, certain of the adrenal hormones when administered to experimental animals actually retard growth. Corticosterone and compound E are particularly efficient in retarding growth of young animals; it is suggested that these results may be due to a depression of pituitary function. These corticosterone-like fractions are especially apt to cause atrophy of the thymus and of the adrenals of healthy young animals. The actual mechanism is not known. Desoxycorticosterone is growth promoting.³

Resistance to toxins: The lowered resistance of adrenalectomized animals to toxins may simply be a function of the lowered metabolic activity. The whole protective mechanism is less responsive after adrenalectomy. There is a striking depression in antibody formation. Blanchard,²⁴ Perla,²⁵ Rose²⁶ and others have shown that there is an increased sensitivity to histamine in adrenal insufficiency and that cortical extract will decrease sensitivity and lend protection. There is some evidence that the administration of adrenal cortical extract in some cases of toxemia will lessen its severity and supply the necessary protection lost by the damaged cortex. The effectiveness of the cortical extract in protecting animals against anaphylactic shock has led to its clinical use in the treatment of serum reactions, allergic reactions, and anaphylaxis. It also has been used in the

treatment of pneumonia, diphtheria, scarlet fever, burns and shock.

Effect on lactation: Brownell and Hartman (1934) reported a lactation factor which permits female mother rats to lactate in the presence of adrenal insufficiency. 'Cortilactin' does not affect glycogenesis. Compound E is also effective in promoting lactation.²³

Muscle metabolism: It has long been shown that adrenalectomized animals are incapable of prolonged muscular activity. Ingle²⁹ has tested the ability of the different steroids of the adrenal cortex to increase the efficiency of muscle activity in adrenalectomized animals and has found that desoxycorticosterone and related fractions do not improve the working capacity of muscles while the members of the corticosterone series are highly effective.³⁰ That this may be closely related to glucose metabolism is further indicated by the fact that the injection of glucose also increases to a considerable degree the performance of the muscles (Ingle and Lukens²⁹). One method of biologic assay has been to tie a weight on to the tail of an adrenalectomized rat and place the animal in warm water to swim until exhausted. The endurance of the animal is said to be a fairly reliable method of determining the potency of the cortical hormones used.

Protein metabolism: The absolute increase in the carbohydrate stores of the fasted animal receiving adrenal cortical extract is at the expense of the protein stores of the body. This is shown by the increased nitrogen excretion which is always adequate to account for the increase in carbohydrate. In addition, such animals lose more weight than untreated controls and there is no evidence that the elevation of the metabolic rate nor fat catabolism is of sufficient magnitude to account for the difference. Animals fed a high carbohydrate diet do not catabolize as much protein. Adrenalectomized animals are deficient in their ability to deaminate such amino acids as alanine and glutamic acid (Russell and Wilhelms²⁹). It is suggested that one of the faults in carbohydrate metabolism lies in the inability

ity of the body to form carbohydrate from amino acids or their residues after deamination.³⁰

Sulfur metabolism: The adrenal is capable of taking sulfur from the blood, and a rise in the sulfur content of the blood and skin follows adrenalectomy.²³ The adrenal is rich in glutathione and the content of this amino acid is increased following perfusion with glutamic acid and cystine.

Resistance to shock: Adrenalectomized animals are highly sensitive to hemorrhage, infection, water intoxication, cold, pain, histamine, and trauma, such as stripping the intestine or lightly tapping a muscle for a short time. These last procedures produce a rather profound shock. Animals can be protected from the shock of these procedures by the administration of adrenal cortical hormones.^{31, 32} The prophylactic effect is much more marked than the therapeutic effect, and the corticosterone series are more effective than desoxycorticosterone. There is a distinct impression among many clinicians, and some evidence to support it, that the preoperative administration of cortical extract is of value in preventing or lessening shock from surgical trauma.³³ In Helfrich's series, the systolic blood pressure was 12 mm. higher on the average, and the pulse rate eight beats per minute slower, in the treated cases of patients subjected to similar operative trauma as opposed to a group receiving no cortical hormone preoperatively.³³ Desoxycorticosterone seems to be of less value (Besser³⁴).

DESOXYCORTICOSTERONE COMPARISON OF THE EFFECT OF CORTICOSTERONE FRACTIONS AND THOSE OF DESOXY- CORTICOSTERONE

Desoxycorticosterone will restore the normal rate of growth to adrenalectomized young animals; it acts primarily on water balance and is without effect on carbohydrate metabolism; it is of little value in resistance to trauma, insulin, histamine, shock and toxins; it is effective in restoring kidney functions; it is effective in the treatment of Addison's disease; and it has been synthesized. Corticosterone fractions on the other hand inhibit growth, act primarily on carbohydrate metabolism, are capable of

increasing the efficiency of skeletal muscle, and protect the animal against shocking procedures. Desoxycorticosterone acts slowly (in 6-24 hours) in relieving symptoms of early adrenal insufficiency and is without effect orally. Corticosterone restores animals with severe adrenal insufficiency in from one to six hours and is effective orally. Whole cortical extract produces marked glycogenesis in the liver; desoxycorticosterone does not. The latter is capable of causing hypertension and acute retention of salt and water in large doses; cortical extracts are less likely to cause hypertension or salt retention even in large doses.³⁶

It is interesting that in Addison's disease, whether caused by tuberculosis of the adrenal cortex or atrophy, there is seldom seen marked changes in carbohydrate metabolism. Hypoglycemia is not a part of the picture.²² It is advisable, however, in Addisonian crises to administer the whole cortical extract rather than desoxycorticosterone alone, as its action is more rapid and it comes nearer to constituting complete replacement therapy.

SUMMARY

The two most striking functions of the adrenal cortex are: (1) the maintenance of normal water and electrolyte balance, and (2) the regulation of carbohydrate metabolism. In the absence of adrenal cortical hormone the body loses salt and water; plasma potassium reaches high levels; cellular hydrops and hemoconcentration occur. The liver and muscles become depleted of their stores of glycogen and hypoglycemia in experimental animals deprived of their adrenals. The changes relative to water and salt metabolism may be alleviated by desoxycorticosterone; those relative to carbohydrate metabolism may be remedied by whole cortical extract or the corticosterone series (compounds A, B, E, and F of Kendall). Some of the differences between desoxycorticosterone and those fractions with an oxygen atom on C-11 are discussed.

REFERENCES

1. Rogoff, J. M., and Stewart, G. N.: The influence of adrenal extracts on the survival period of Adrenalectomized dogs. *Am. J. Physiol.*, 84:660, 1928.

2. Hartman, F. A., Browne, K. A., Hartman, W. E., and MacArthur, C. G.: The hormone of the adrenal cortex, *Am. J. Physiol.*, 86:353, 1928.
3. Kendall, E. C.: Hormones of the adrenal cortex, *Endocrinology*, 30:853, 1941.
4. Kendall, E. C.: Hormones, *Ann. Rev. Biochem.*, 10:285, 1941.
5. Pfeiffer, C. A., and Hooker, C. W.: Hormonal factors in the survival of adrenalectomized mice, *Am. J. Physiol.*, 131:2, 1940.
6. Mason, H. L.: Chemical nature of the hormones of the adrenal cortex, *Proc. Staff Meet. Mayo Clin.*, 15:19, 1940.
7. Kendall, E. C.: The function of the adrenal cortex, *Idem*.
8. Gamble, J. L.: Extracellular fluids and its vicissitudes, *Bull. Johns Hopkins Hosp.*, 61:151, 1937.
9. Loeb, R. F., Atchley, D. W., Benedict, E. M., and Leland, J.: The function of the adrenal cortex, *Jour. Exp. Med.*, 57:775, 1933.
10. Wiggers, C. J.: *Physiology in Health and Disease*, Philadelphia, Lea and Febiger, 1939.
11. Swingle, W. W., Parkins, W. M., and Taylor, A. R.: A study of water intoxication in the adrenalectomized and the intact dog, *Am. J. Physiol.*, 119:557, 1937.
12. Silvette, H.: Chloride, carbohydrate, and water metabolism in adrenal insufficiency, *Am. J. Physiol.*, 108:535, 1934.
13. Yannet, H.: Changes in brain resulting from depletion of extracellular electrolytes, *Am. J. Physiol.*, 128:683, 1940.
14. Swingle, W. W.: Revival from insufficiency and maintenance of adrenalectomized dogs with low serum sodium and chloride levels, *Proc. Soc. Exp. Biol. Med.*, 34:75, 1934.
15. Menkin, V.: Effect of adrenal cortical extract on capillary permeability, *Am. J. Physiol.*, 129:691, 1940.
16. Fine, J., and Fischman, J.: A study of the effect of desoxycorticosterone acetate on capillary permeability, *Proc. Soc. Exp. Biol. & Med.*, 49:98, 1942.
17. Cited from (32).
18. Hartman, F. A.: Functions of the adrenal cortex, *Endocrinology*, 30:861, 1942.
19. Kendall, E. C.: Functions of the adrenal cortex, (cf. (6)).
20. Corey, E. L., and Britton, S. W.: Glycogen level in the isolated liver perfused with cortico-adrenal extract, insulin, *Am. J. Physiol.*, 131:783, 1941.
21. Cited from (22).
22. Kepler, E. J., and Willson, D. M.: Diseases of the adrenal glands, *Arch. Int. Med.*, 68:979, 1941.
23. Hartman, F. A.: Functions of the adrenal cortex (cf. (18)).
24. Cited from (23).
25. McGottesman, J., and Perla, D.: Effects of injections of cortin on resistance of suprarenalectomized rats to large amounts of histamine, *Proc. Soc. Exp. Biol. & Med.*, 28:1022, 1931.
26. Rose, Bram, and Browne, J. S. L.: The effect of adrenalectomy on the histamine content of the tissues of the rat, *Am. J. Physiol.*, 131:589, 1941.
27. J. Botella Llusia: *Med. Espan.*, 5:314, 1941. Cited from (30).
28. Swann, H. G.: The pituitary-adreno-cortical relationship, *Physiol. Rev.*, 20:493, 1940.
29. Cited from (30).
30. Long, C. N. H.: A discussion of the mechanism of action of adrenal cortical hormones on carbohydrate and protein metabolism, *Endocrinology*, 30:870, 1942.
31. Perla, D.: Prevention of histamine and surgical shock by cortical hormone and saline, *Proc. Soc. Exp. Biol. & Med.*, 43:397, 1940.
32. Selye, H., Dosne, C., Bassett, L., and Whittaker, J.: On the therapeutic value of adrenal cortical hormones in traumatic shock and allied conditions, *Canadian M. A. J.*, 43:17, 1940.
33. Helfrich, L. S., Cassels, W. H., and Cole, W. H.: Cortical extracts in the treatment of shock, *Am. J. Surg.*, 55:410, 1941.
34. Besser, E. L.: Role of adrenal gland in shock, *Arch. Surg.*, 43:249, 1941.
35. Britton, S. W., and Kline, R. F.: The relative effects of desoxycorticosterone and whole cortico-adrenal extract on adrenal insufficiency, *Am. J. Physiol.*, 133:503, 1941.
36. Remington, J. W., Parkins, W. M., Swingle, W. W., and Drill, V. A.: Efficacy of desoxycorticosterone acetate as replacement therapy in adrenalectomized dogs, *Endocrinology*, 29:740, 1941.

NEW ORLEANS Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

C. C. deGravelles, M. D., Ex officio
For one year: Lucien A. LeDoux, M. D., Chairman
H. W. Kostmayer, M. D., Secretary
For two years: James K. Howles, M. D.
For three years: G. C. Anderson, M. D.,
Vice-Chairman
Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D. *Editor-in-Chief*
Willard R. Wirth, M. D. *Editor*
Daniel J. Murphy, M. D. *Associate Editor*

COLLABORATORS—COUNCILORS

Edwin L. Zander, M. D.
J. T. O'Ferrall, M. D.
Guy R. Jones, M. D.
T. B. Tooke, Sr., M. D.
George Wright, M. D.
Rhett McMahon, M. D.
C. A. Martin, M. D.
W. F. Couvillion, M. D.
Paul T. Talbot, M. D. *General Manager*
1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

THE WAGNER-MURRAY BILL

Senator Wagner has made the announcement that the bill which is known by his name and that of Senator Murray was introduced at the request of the C. I. O. and the A. F. of L. One wonders if these two labor organizations have any idea what they are demanding of the American people as a whole. One wonders if they have any appreciation of what a profound change would take place in medical practice in this country were the bill to become a law. One wonders furthermore if the leaders of or-

ganized labor would be willing to abide by the provisions of the law and if they wish to become taken care of by a federalized system of medical care.

Surgeon General Parran of the United States Public Health Service points out that the traditional policy of his department has been to work through grants-in-aid to the states. The service is not directly interested in the treatment of disease in the individual. Were the bill to become a law it would call upon the Public Health Service to set up a service for sickness which is not even directly related to the preventive services which are carried out largely under the direction of state health departments. The law calls for certain benefits which cannot possibly be carried out because of a lack of physical facilities, such as laboratories and hospitals which are notable by their absence in sparsely settled areas. Certainly medical care cannot be provided at the present time which would come under the provisions of the law, states Dr. Parran. Certainly if the titular head of Public Health work in this country finds real flaws in this proposed law, it is not to be wondered at that the medical man does find innumerable defects, unfairness and demagogic demands on the doctor which certainly these two labor organizations would resist, and probably successfully, if like demands were made upon them which would be in any way comparable to the sacrifices the doctor is asked to make in order to make possible the carrying out of the proposed pernicious bill.

—o—

THE ANNUAL MEETING

The announcement of the Executive Committee that this year an annual meeting would be held in New Orleans on April 24-26 has been received with gratification by members of the Louisiana State Medical Society. The medical profession of the state apparently is glad and pleased that the scientific meeting, which was discontinued on account of the war, will be resumed this year. The members of the State Medical Society to a man are working diligently and harder probably than ever in their lives. The exigencies of an active practice are

such that it becomes almost an impossibility with so many men in the service, for those who are so cheerfully and willingly substituting for our departed friends, to read, to study or to relax. A meeting this year will allow the members of the profession to learn what has been done and is going on in medical fields and medical practice. Furthermore, aside from the scientific features of the program, the opportunity will be afforded for the hard working physician to have a well earned and well deserved period of rest and relaxation.

It is earnestly hoped that the profession will realize that it can gain much by attendance at the annual meeting. It is probably the feeling of the Executive Committee, as well as those interested in the Society, that it is the duty of every man to attend not only for what he can get out of the meeting but also to show that we have a united, well organized body of doctors who stand together and who will be prepared to fight for their rights when and if war and post-war legislation is presented which will put the medical man in the category of a servant to the state.

HEMORRHAGE IN PULMONARY TUBERCULOSIS

The occurrence of hemoptysis is by no means always the result of tuberculosis but until it is proved otherwise it is wise to assume that the patient who has spitting of blood has pulmonary tuberculosis. Occasionally the blood may come from the nasopharynx and its site of origin be misinterpreted. It may come from the bronchi or lung itself, in such conditions as bronchiectasis, bronchiogenic carcinoma and lung abscess. Rheumatic heart disease with mitral stenosis so frequently causes an hemoptysis that many an individual with equivocal heart signs is diagnosed as having pulmonary tuberculosis and put under a

regimen of treatment for this disease. Once in a while hemoptysis may be a very early or even the first symptom of tuberculosis. Under such circumstances the person who has hemoptysis is indeed most fortunate. As a rule, however, hemoptysis particularly if it is a large hemorrhage, indicates serious pulmonary involvement.

Recently Minor* has made a statistical study of the incidence of pulmonary hemorrhage in persons who had spat up at least 4 c.c. of blood. Roughly it was found that about 25 per cent of the patients he followed had hemoptysis sometime or another during the course of the disease. The hemorrhage amounted in quantity from 4 c.c. to 2000 c.c., the average being 150 c.c. Of the 220 persons who had hemoptysis, only 47 did not have roentgenologic evidence of a cavity. Eleven of these patients were found not to have tuberculosis. Eight of every ten of the patients with hemorrhage had positive sputum. In the great majority of instances the hemorrhage came on without any precipitating factor, such as physical exertion or chest trauma. Sometimes the hemorrhage occurred when the patients were asleep. In a few of the patients there was a history of something to excite hemorrhage. In ten of the female patients there was a relationship between hemorrhage and the menstrual period.

Minor points out that hemorrhage must not be lightly regarded. It may produce, if large, strangling and asphyxiation and even fatal blood loss. There is always a possibility existing that the blood may wash out a cavity which is filled with living organisms and spread the infection to other portions of the lung, bringing about tuberculous bronchopneumonia or massive caseous pneumonia.

*Minor, George R.: Haemorrhage in pulmonary tuberculosis, *Am. Rev. Tuberc.*, 48:109, 1943.

ORGANIZATION SECTION

The Executive Committee dedicates this page to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

1944 ANNUAL MEETING

The Executive Committee of the Louisiana State Medical Society was polled recently concerning its view for the Annual Meeting, which had been scheduled for the latter part of April, 1944. At the last meeting of the House of Delegates authorization was granted to the Executive Committee to make whatever decision they felt most feasible in regard to the Annual Meeting. Due consideration was given to present war conditions which have disrupted to a great extent the medical profession of our state. Many of our members are now in the armed forces. However, it was thought that those who are still here taking care of the civilian population would be interested in assembling for the purpose of gathering information on war conditions, especially important matters in relation to post-war plans. With this idea motivating their consideration, it was decided to have a business and scientific program. The House of Delegates will meet on Monday, April 24; the scientific program to be held on Tuesday and Wednesday, April 25 and 26.

The scientific program, which is going to be an intensive one, will comprise sixteen papers. The special committee authorized by the House of Delegates met in conjunction with the Committee on Scientific Work and arranged for the distribution of papers under the various sub-sectional titles as follows:

MEDICINE AND ALLIED BRANCHES

Medicine and Therapeutics.....	2
Pediatrics	1
Nervous Diseases	1
Bacteriology and Pathology	1
Public Health and Sanitation	1
Gastro-enterology	1

SURGERY AND ALLIED BRANCHES

General Surgery	2
Gynecology	1
Obstetrics	1
Eye	1
Ear, Nose and Throat	1
Urology	1
Orthopedic Surgery	1
Radiology	1

It was planned further that there would be only one scientific gathering, obviating any confliction with the attendance at any one session. In other words, there will be only one scientific meeting hall, adequately serviced, where in a two-day period these sixteen papers will be presented. Those interested in presenting papers should communicate with the respective chairmen of sections, names of which appeared in our January issue.

Dr. Daniel J. Murphy is Chairman of the Arrangements Committee for the Annual Meeting. His address is 1430 Tulane Avenue, Room 105, New Orleans 13. Any one who is interested in any feature of the State Society meeting should communicate with him concerning details.

The Roosevelt Hotel will be the headquarters for the meeting. Dr. Murphy has requested that you make reservations at once, in order that hotel accommodations will not be unduly cramped. You should know that the utmost efforts will be made to get accommodations for all those desirous of attending. Also you should know that due to war conditions there may be some slight restrictions on accommodations compared with previous years.

The presidential address and annual oration will be delivered on Tuesday night, and Wednesday night will be reserved for some entertainment feature. Proper space will be allotted for adequate facilities for commercial exhibits. Very shortly we will be able to announce, through this section, the various committees that will work un-

der Dr. Murphy in the arrangement of details for the meeting. The regular program with full details, both scientific and otherwise, will be sent to every member two weeks before the meeting.

We will welcome inquiries concerning any features of the meeting. Your interest, cooperation and attendance to make this meeting go over in a big way are earnestly solicited. While the program is an experimental one the executive officers and committees, whose duty it is to arrange the meeting, expect to gather some important information as to the wishes of the profession for future meetings. After all they are trying to arrange the annual meeting to suit the needs and conveniences of our overtaxed doctors, so do lend them your fullest cooperation.

LEGISLATIVE NEWS

It may be of interest to know that recently there was for consideration before the Senate of the United States H. R. 3598 appropriating \$1,000,000 for the use of the Surgeon General of the United States Public Health Service. This was to be used for expenses incident to relocating physicians in critical areas where there is supposed to be a deficiency in medical care. Personnel was to be supplied from members of the Public Health Service. The application for such need would be made from a community or municipality to the board of health of the state, and after sufficient investigation appropriate recommendations would be made to the Public

Health Service for such aid. The resolution, furthermore, would pay the relocated physician a salary of \$250.00 a month for three months. The city or municipality was supposed to participate up to \$100.00 in reimbursing the physician for expense in moving to such a critical area. The resolutions, however, did not pass in the above form.

Instead, \$200,000 was appropriated; the locality or municipality which makes request for aid will participate twenty-five per cent in the relocation of the physician, and instead of using Public Health Service men these physicians will be selected by the state Committee on Procurement and Assignment from the civilian population. Furthermore, these physicians will be required to meet the qualifications of the state board of medical examiners in the state where they are relocated. It is interesting to note that appearing in favor of the original resolutions were members of our national Committee on Procurement and Assignment and officers of the American Medical Association. Thus we were very fortunate in not having the original resolution passed into law.

There are many vital bills now facing Congress concerning medical practice. We must be diligent and not let up in our activities trying to defeat these measures, remembering that Senate Bill 1161, known as the Wagner-Murray Socialized Medicine Bill, is still a formidable document for our defeat, and should retain at least for the present our serious concern.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

AMERICAN FEDERATION FOR CLINICAL RESEARCH

The New Orleans section met December, 1943, at the Louisiana State University Medical Center and the Hutchinson Memorial Building of Tulane Medical School.

The following are abstracts of some of the presentations:

Heart Block: A Study of One Hundred Cases with Prolonged P-R Interval. (Robert Bruce Logue, Major, M. C., and James Fletcher Hanson, Major,

M. C.—From the Cardiovascular Section, Medical Service, Lawson General Hospital, Atlanta, Ga.)

A study of 100 cases of heart attack with P-R intervals prolonged to .22 or above is reported. This study consists of a review of 6,732 electrocardiograms taken on 4,364 patients at the Lawson General Hospital or an incidence of 2.3 per cent. The diseases associated with block are tabulated. In 34 per cent of the cases there was no evidence of heart disease and no history of past or present disease which might reasonably be expected to be associated with a prolonged conduction time. The

effect of atropine in heart block is discussed with a study of 38 patients to whom atropine was administered intravenously. The normal range of P-R interval is discussed and the suggestion is made that an occasional normal person may have a prolonged P-R interval, perhaps associated with an individual variation of vagal tone.

Pathogenesis of Keloids with Clinical Applications in Medicine and Surgery. (Wallace Marshall, M. D.—Mobile, Alabama.)

This study demonstrates the role of tissue edema in the production of keloids. The paper describes the physiologic mechanisms which are involved. The peculiar anatomy of the skin is stressed. The proliferation of connective tissue is discussed with the formation of keloid growth. Original experiments are described which demonstrate that this process is at least semi-reversible. A short review of these principles is discussed along with the clinical application for the treatment of such entities as keloidosis which follows acne vulgaris and burns. The role of vasoconstriction in the healing process is reviewed in order to correlate these many facts and to stress that the same basic pathophysiologic events occur in these two fields with regard to the formation of keloids. The preventive phase of these studies is described, and the experimental control of keloidal formation in plastic surgery is discussed.

A Cardiovascular "Blackout" Test. (H. S. Mayerson.—From the Department of Physiology, School of Medicine, Tulane University of Louisiana, New Orleans.)

A test has been devised in which the blood pressure and pulse rates are determined before and after a standard amount of exercise with the subject in the upright position. The subjects are rested in the horizontal position until pulse rate and blood pressure readings are stabilized. They are then instructed to mount a bicycle ergometer to which supports have been added for the back and legs. These are adjusted so that the subject sits comfortably at an angle of between 60 and 75 degrees. No foot rest is provided, thus eliminating all weight bearing on the extremities and minimizing the amount of muscular movement. Determinations of blood pressure and pulse rate are made at two minute intervals for a total of 10 minutes with the subjects in the "upright" position. At the end of this period the leg supports are swung out of position and the subject instructed to begin work on the ergometer, pedaling at the rate of 50 revolutions per minute as set by a metronome. The amount of work done is adjusted to 2000 foot-pounds per minute. The exercise is continued for 10 minutes, at the end of which time the leg supports are quickly swung into place and the subject allowed to relax. Pulse rate and blood pressure determinations are resumed as quickly as possible and continued at one to two minute intervals for

15 minutes, except where syncope interrupts the test. Notes are made regarding the condition of the subject during the test, including the appearance of pallor, sweating, and yawning. He is also questioned regarding symptoms at the end of the test.

Fifty students in the School of Medicine have been repeatedly tested up to the present time. Twenty-seven showed signs or symptoms of syncope or actually fainted during the first test. This embarrassment of the cardiovascular system is related to the low level of systolic pressure, the changes in diastolic pressure and pulse rate being secondary compensatory manifestations. The amount of sleep, recent illnesses and amount of physical exercise influence the response. Because of the seeming correlation between susceptibility to fainting and ease of "blacking out" when pulling out of a dive, the test is proposed as a particularly suitable method of selecting pilots for combat flying.

The Evaluation of a New Oral Estrogen (Ethinyl Estradiol). (James E. Robertson, M. D.—Dallas, Texas.)

The discovery of stilbestrol with its effective estromimetic action has made us all aware of the possibilities of effective substitution therapy by the oral route alone. The action of stilbestrol, however, has left many things to be desired, and the search has been continued for an orally effective estrogen which would not share the deficiencies of stilbestrol. By the linkage of an ethinyl group to the estradiol molecule the effectiveness of estradiol by mouth has been increased many times.

This preliminary report is based on nine months' study of a group of patients with ovarian failure. Some of these patients had severe menopausal symptoms which were useful for the evaluation of the drug. Others were evaluated chiefly by objective evidence of response obtained by the use of Shorr's stain on vaginal smears and by biopsy of the endometrium. The effectiveness of ethinyl estradiol in priming the endometrium for progesterone action was verified in several instances.

These studies revealed that the dosage of one-fiftieth milligram daily was usually effective in relieving menopausal flashes; only a few severe cases required one-twenty-fifth milligram for this result. A dosage of three-tenths milligram daily produced regeneration of atrophic endometria to a late proliferative stage and was effective in priming the endometrium to respond to progesterone.

Nausea was produced by the medication with as little as fifteen-hundreds milligram. In numerous instances, individuals unable to tolerate stilbestrol, because of nausea and vomiting or more rarely diarrhea, tolerated ethinyl estradiol.

I wish to express my thanks to Dr. Max Gilbert of Schering Corporation for the supply of ethinyl estradiol used in these studies.

The Habitus in Patients with Sickle Cell Anemia and in Those with Sicklemia. (Travis Winsor, M. D., and George E. Burch, M. D.—From the Department of Medicine, School of Medicine, Tulane University of Louisiana, New Orleans.)

While making certain observations on patients with sickle cell anemia it was observed that those with severe disease showed certain physical trends. The purpose of this study was to determine: (1) if there is a characteristic habitus in patients with active sickle cell anemia (anemia in the presence of degranocytes); (2) if there is a characteristic habitus in subjects with sicklemia (the presence of degranocytes in the absence of anemia), and (3) to determine what factors influence the body build in these patients.

Three methods of study were employed. The patients were (1) observed in the nude state; (2) photographs and roentgenograms were studied and, (3) standard anthropometric measurements were made. For each patient with sickle cell anemia or sicklemia, 10 normal subjects were observed and measured for comparison. Fifteen patients, six to 36 years of age, with active latent sickle cell anemia and four adults with sicklemia were studied.

The adult subjects with severe long standing disease showed a fairly characteristic body type. The stature was somewhat short and the body weight was markedly reduced. The width of the shoulders, chest, and hips was narrow which gave the patients a distinctly linear type of habitus. The hands were long and very narrow and may well be termed "spider hands." The tips of the fingers were thin and tapered and "parrot beaking" of the nails frequently present. Frank clubbing and cyanosis were not encountered. The foot shared

in the quality of thinness and elongation. The arms were long and frequently reached almost to the knees. The legs also appeared long and the trunk short.

There was an increase in the lumbar and dorsal curvatures of the spine which gave the patient a "humpbacked" and "sway-backed" appearance. In one patient with severe lordosis there was flattening of the vertebral bodies which undoubtedly contributed to the decrease in the height of the trunk. A few of the adult patients had some evidence of hypogonadism evidenced by changes in the primary and secondary sexual characteristics.

In the children with active or latent sickle cell anemia, a deepening of the anterior-posterior diameter of the chest gave them a "hoop chested" appearance. The abdomen was sometimes markedly enlarged and protruded abruptly at the xiphoid process. The changes encountered in the children were less consistent as the disease process had been present for a relatively short length of time.

In the patients with sicklemia, no significant deviation from the normal was seen.

It may be said that there is a fairly characteristic "degranocytanemia type of habitus" which is usually present in adult patients with severe long standing disease. The habitus in children is variable and depends upon the duration and severity of the disease. The habitus in those with sicklemia is not abnormal. The factors influencing the body type, at least, are the anemia changes in the endocrine system, particularly the gonads, and the vascular pathology. The changes in the osseous system as seen in the alterations in the bodies of the spine and extremities are probably secondary.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR OF MEETINGS

February 1,	Eye, Ear, Nose and Throat Staff, 8 p. m.	February 15,	Charity Hospital Medical Staff, 8 p. m.
February 2,	Mercy Hospital Staff, 8 p. m.	February 16,	Charity Hospital Surgical Staff, 8 p. m.
February 3,	Clinico - Pathological Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m. Executive Committee, Baptist Hos- pital, 8 p. m.	February 17,	Clinico - Pathological Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
February 7,	Board of Directors, Orleans Parish Medical Society, 8 p. m.	February 18,	I. C. R. R. Hospital Staff, 12:30 p. m.
February 9,	Clinico - Pathological Conference, Charity Hospital Morgue Amphi- theater, 1:30 p. m. Touro Infirmary Staff, 8 p. m. Women's Auxiliary, Orleans Par- ish Medical Society, Orleans Club, 3 p. m.	February 21,	Hotel Dieu Staff, 8 p. m. Clinico - Pathological Conference, Baptist Hospital, 8 p. m.
February 14,	Scientific Meeting, Orleans Par- ish Medical Society, 8 p. m.	February 22,	Baptist Hospital Staff, 8 p. m.
		February 23,	Clinico - Pathological Conference, Charity Hospital Morgue Amphi- theater, 1:30 p. m. French Hospital Staff, 8 p. m.
		February 24,	Clinico - Pathological Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

February 25, L. S. U. Faculty Club, 8 p. m.
New Orleans Hospital Dispensary
for Women and Children Staff,
8 p. m.

During the month of January the Society held two meetings; the annual installation meeting, and a regular scientific meeting. The installation meeting was held at the Jung Hotel. At the regular scientific meeting a symposium on tropical medicine, stressing the possible effects of tropical diseases on the people of the United States because of soldiers returning from the various battlefronts, was presented by Drs. Albert Miller, Arthur Judson Walker, Joseph D'Antoni, L. Everard Napier, Harry A. Senekjie and Ernest Carroll Faust.

Dr. Woodard D. Beacham was recently awarded a life membership in the American College of Surgeons for the most excellent medical reports presented by candidates for fellowship during 1943.

Dr. Julian Graubarth was recently re-appointed State Chairman for Louisiana of the American Academy of Pediatrics.

Dr. Julian Graubarth attended the regional meeting of the Southern Section of the American Academy of Pediatrics recently held in Cincinnati.

Dr. Henry D. Ogden recently returned from three weeks work in allergy at New York Post Graduate Medical School under Spain, Fuchs, Strauss, etc. While in New York Dr. Ogden attended a meeting of the Society for the Study of Asthma and Allied Conditions.

Dr. Robert A. Katz recently attended a meeting of the Mexican Gastroenterological Society.

Dr. R. J. Mailhes was recently installed as president of the Mercy Hospital staff. Other officers installed were: Dr. Charles Gelbke, vice-president; Dr. Gordon Johnson, secretary, and Dr. O. J. Burger, treasurer. Dr. W. G. Troeschler was made a member of the staff.

DANIEL J. MURPHY, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

ATTENTION ALL SECRETARIES OF DISTRICT AND PARISH MEDICAL SOCIETIES

On account of the overworked condition of the medical practitioner at the present time, the journal will not repeat its request to the secretaries to send in accounts of their district or parish medical society meetings, but we still like to get these and some of the secretaries are co-operating most heartily. However, we are requesting that you put the New Orleans Medical and Surgical Journal down on your list of addresses and send the notices of all meetings to this office, so that it will be possible to publish a brief statement as to the meetings held by organized medicine throughout the state.

EAST BATON ROUGE PARISH MEDICAL SOCIETY

The following officers were recently elected by the East Baton Rouge Parish Medical Society for the year 1944: President, Dr. Henry C. Hatcher; Vice-President, Dr. Arthur D. Long; Secretary-Treasurer, Dr. Felix Boizelle; Delegates, Drs. F. U. Darby, H. Guy Riche, T. Jeff McHugh, U. S. Hargrove, and A. D. Long; all of Baton Rouge.

JEFFERSON DAVIS PARISH MEDICAL SOCIETY

At a recent meeting of the Jefferson Davis Parish Medical Society the following officers were elected for the year 1944: President, Dr. Morgan

Smith, Jennings; Vice-President, Dr. John McClure, Welsh; Secretary-Treasurer and Delegate, Dr. L. E. Shirley, Jennings.

OUACHITA PARISH MEDICAL SOCIETY

The Ouachita Parish Medical Society held a meeting recently at which the following officers were elected for the year 1944: President, Dr. Irma Jones; Vice-President, Dr. G. A. Varino; Secretary-Treasurer, Dr. Zelma Alden; Delegates, Drs. A. G. McHenry, D. I. Hirsch, and G. T. Galaspy; all of Monroe.

CLAIBORNE PARISH MEDICAL SOCIETY

The newly elected officers for the year 1944 of the Claiborne Parish Medical Society are as follows: President, Dr. C. O. Wolff, Haynesville; Vice-President, Dr. E. B. Middleton, Homer; Secretary-Treasurer, Dr. M. J. Rivenbark, Haynesville; Delegate, Dr. J. W. Featherston, Homer.

CHARITY HOSPITAL

A meeting of the Medical Division of the New Orleans Charity Hospital Visiting Staff was held on January 18, 1944, in the Auditorium of the hospital. The following program was presented: Interpretation of Brain Waves, by Dr. Walker Thompson; Vacciniform Dermatitis of Kaposi, by Dr. E. M. Gropper, and Psychiatric Problems in a Child, by Dr. Joel Fleet.

BAPTIST HOSPITAL

The regular monthly clinical staff meeting of the Baptist Hospital of New Orleans was held on January 25, 1944, at 8 p. m. The program consisted of the following: Some Uses for Red Blood Cells, by Dr. J. W. Davenport; Postpartum Hemorrhage (moving picture); Death Report, discussed by Dr. W. H. Gillentine; election of officers for the coming year.

SIXTH ANNUAL CONGRESS ON INDUSTRIAL HEALTH

The sixth Annual Congress on Industrial Health, sponsored by the Council on Industrial Health of the American Medical Association, will be held Tuesday and Wednesday, February 15 and 16, at the Palmer House in Chicago. This meeting follows directly after that of the Congress on Medical Education and Licensure. Physicians and others interested in industrial health are cordially invited. There is no registration fee.

REFRESHER COURSE IN OTOLARYNGOLOGY

The Department of Otolaryngology of the University of Illinois College of Medicine announces its spring refresher course, to be held at the College in Chicago, March 20-25, 1944. The course will be largely didactic, but some clinical demonstrations have been included. It

is intended primarily for specialists, who under existing conditions, are able to devote only a brief period to postgraduate review study. The fee is \$50.00. Registration will be limited. In letter requesting application, state school and year of graduation; also give details concerning specialty training and experience. Address—Department of Otolaryngology, University of Illinois College of Medicine, 1853 West Polk Street, Chicago, Illinois.

UROLOGY AWARD

The American Urological Association offers an annual award "not to exceed \$500" for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specified practice for not more than five years. All interested should write the Secretary, for full particulars.

The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, June 19-June 22, 1944, Hotel Jefferson, St. Louis, Missouri.

Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tennessee, on or before March 15, 1944.

AMERICAN COLLEGE OF SURGEONS

One-day war sessions will be held by the American College of Surgeons during March and April. On Monday, March 27, there will be a meeting in Jacksonville. The meeting held for the surgeons of Mississippi, Louisiana, western Tennessee and Alabama originally scheduled for Jackson, Mississippi, has been cancelled. Some other city in this area will probably be selected in the near future.

NEWS ITEMS

The Secretary-Treasurer, Dr. P. T. Talbot, on January 5 addressed the Rotarians of Houma on Senate Bill No. 1161 and federal socialization of medicine. This was quite a lively meeting and lots of interest was manifested by the group present.

Dr. Val H. Fuchs, President-elect of the State Society, addressed a joint meeting of the Kiwanis and Rotary Clubs of Hammond, Pontchatoula, Amite and Independence, in Hammond on January 18, on the Wagner-Murray-Dingell Bill No. 1161.

Dr. Robert A. Katz attended a meeting of the Mexican Gastroenterological Society on December

11, 1943. A symposium of papers on diseases of the esophagus was given. Dr. Ayala Gonzales, president of the society, presented a report on the successful resection of a tumor of the terminal esophagus with anastomosis to the stomach.

The many New Orleans friends of Dr. Walter Ovid McCammon have heard with deep regret of his death in Sicily while fighting with the American troops. Dr. McCammon was a graduate of Tulane in the class of 1935. He married a New Orleans girl. Prior to the time that he entered the Army he was at the Boston City Hospital in Boston.

The tenth annual meeting of the Mississippi Valley Medical Society will be held at the Pere Marquette Hotel, Peoria, Illinois, September 27 and 28.

The 1944 session of the National Conference on Medical Service will be held February 13 at the Palmer House in Chicago on the day preceding the Annual Congress on Medical Education and Licensure. This meeting comes at a critical time in the life of the nation and of medicine.

Major General James Carre Magee, Medical Corps, United States Army, retired, has been named executive officer of the information service of the division of medical sciences of the National Research Council, Professor Ross G. Harrison, chairman of the Council, announced here today. He will assume office as of December 1. Gen. Magee will devote full time to the organization of a central office in the National Research Council which will collect medical reports and records, widely dealing with military medical practice, civilian practice as affected by the war, medical education and research and the distribution of diseases. This material, so far as military necessities permit, will be made available by publications, summaries and notes.

In memory of Frederick Banting, discoverer of insulin, a Liberty ship was named for him. The ship was christened by Lady Banting in the Bethlehem-Fairfield Shipyard, Baltimore, on December 20, 1943.

HEALTH OF NEW ORLEANS

The Bureau of the Census, Department of Commerce, reported that for the week which ended December 18 there occurred in New Orleans 135 deaths, distributed 94 white, 41 colored, with 10 infant deaths. This is a reduction of 22 deaths as contrasted with the previous week. There was a tremendous increase in the number of deaths in the city in the week ending December 25, proving how lethal may be the existing epidemic of influenza. There were 229 deaths

in the city as contrasted with the three-year average of the corresponding week of 146. One hundred and fifty-seven of these deaths occurred in the white population and 72 in the colored, with 14 infant deaths. A very large number of deaths taking place in the city continued in the succeeding week which came to a close January 1, 1944. There were 211 deaths, divided 153 white, 58 all others, 14 of the deaths being in children under one year of age. The year 1943 has not been as healthy a year as was the year of 1942. In this year there were 6,926 deaths as contrasted with 1943 when 7,706 New Orleanians expired. In other words there were 780 more deaths in the City of New Orleans in 1943 than in 1942. Part of this increase may be accounted for by the increase in population, but unfortunately this would not explain the deaths of 780 people. More than likely is it that 1942 was an exceptional year as is well known in its health record; 1943 has not been as healthy a year, and in the last two weeks of the year there were a large number of people dying from influenza and its complications. For the week which ended January 8 there were 186 deaths in the city, divided 127 white, 59 non-white. There were nine deaths in children under one year of age.

INFECTIOUS DISEASES IN LOUISIANA

The Louisiana State Board of Health reported for the week ending December 11 influenza with 85 cases, which record leads all other reportable diseases. Other diseases occurring in numbers greater than 10 include 38 cases of chickenpox, 20 of pulmonary tuberculosis, and 10 of bacillary dysentery. During this week there were four cases of malaria reported, three in Rapides Parish and one in Orleans. Four cases of typhus fever were listed and one of poliomyelitis. "Other diseases" not regularly listed include 47 cases of unclassified pneumonia. For the week which closed December 18 influenza again led the list with 58 cases, followed by 39 of pulmonary tuberculosis, 13 of malaria, and 10 of septic sore throat. There were reported also 21 cases of unclassified pneumonia. Twelve of the cases of malaria were reported from Jackson Parish. One case of poliomyelitis was discovered and strange to say one of smallpox. It is apparent that all cases of influenza are not being reported. However, the epidemic as prevalent at the present time has resulted in a marked increase in the number of reported cases, there being 148 listed in Xmas week and no other diseases being reported in numbers greater than 10 except 15 cases of German measles and 24 cases of unclassified pneumonia. Six cases of meningococcus meningitis were reported this week which presages considerable increase in the incidence of this disease.

CORRESPONDENCE

Dear Doctor:

There is a critical need for medical and surgical supplies that may lie hidden and forgotten in your office: Discarded or tarnished instruments . . . surplus drugs . . . vitamins . . . infant foods. Collected, packaged, sent to the Medical and Surgical Relief Committee, they can play a vital role in its program of medical relief for the armed and civilian forces of the United Nations.

Surgical instruments and medicines are sought after by physicians and pharmacists' mates of our Navy . . . are hungrily snatched by the medical corps of our Allies. The work of war-zone hospitals and welfare agencies is too often crippled by the lack of medical supplies. Community nurseries in this country, refugee camps abroad cry out for vitamins and baby foods for their ill-nourished charges.

Our committee has supplied over 900 sub-hunting and patrolling ships of the Navy with emergency medical kits; equipped battle-dressing stations on battleships, destroyers, and cruisers. The Committee's roll-call of medical requests—not one of which has been turned away—reads like a world geography: The Fighting French in North Africa and Tahiti; the Royal Norwegians in Canada and Iceland; the West Indies; South and Central Africa; China; India; Great Britain; Yugoslavia; Greece; Syria; Russia; Alaska and of course, the United States.

To meet the demands that pour into headquarters, the Committee needs all types of instruments, especially clamps, scalpels, forceps, and all kinds of drugs from iodine to sulfa products. By contributing what you can spare, you will help speed another shipment of sorely-needed medical aid.

Joseph Peter Hoguet, M. D.
Medical Director,
420 Lexington Ave.,
New York, N. Y.

WOMAN'S AUXILIARY

The following is a report of the work done by Legislative Chairman Mrs. W. R. Harwell of the Woman's Auxiliary to the Shreveport Medical Society. It is an outstanding report and should be of interest to other auxiliaries.

The Wagner-Murray Bill, S.1161, has caused much concern among our members as it surely must have among the members of every other auxiliary. Our Legislative Chairman, Mrs. W. R. Harwell, has worked consistently and effectively for the education of the group as well as of the laity, stressing always the serious implications of the bill not only to the medical and its allied professions, but also to our whole system of free economic enterprise.

At our first meeting in the fall she presented the matter, having familiarized herself with all

data then available, and she has since emphasized and re-emphasized the necessity for further self-education within the group. To this end she has distributed literature to the membership. Members have been urged to make themselves thoroughly conversant so as to be able to discuss the bill intelligently and propose its defeat convincingly. Furthermore, members were requested to write their senators and representatives. The Auxiliary as a body wrote its men in Washington, making known its feelings in the matter.

Mrs. Harwell has addressed groups interested in social legislation, and was successful in bringing the matter of the bill to the attention of the Fourth District, Louisiana Federation of Women's Clubs, thereby making it fairly certain that at least 1000 women in this part of the state will become aware of this piece of pending legislation. Our members have the feeling that every honest layman who is made cognizant of the bill and the dangers implied therein, will become an advocate for defeat of this piece of un-American legislation.

(Mrs. J. M.) Lucile L. Bodenheimer,
Publicity Chairman, Women's Auxiliary
to the Shreveport Medical Society.

Mrs. P. L. Perot, president of the Women's Auxiliary to the Ouachita Parish Medical society, presided over the luncheon table in the Butterfly Room of the Frances Hotel when the regular monthly luncheon was held in December. Mrs. Perot took this opportunity to deliver a message from Miss Myrtle Rodgers, president of the local League of Women Voters, requesting every member of the auxiliary to register without fail before December 18 so that they could vote in the coming election. A request was also made for cooperation in contacting all women voters.

Mrs. Perot introduced the guest speaker, Dr. J. E. Walsworth, who talked on the subject of "Socialized Medicine."

Mrs. A. G. McHenry, public relations chairman, at this time stated that letters had been mailed to thirty-seven women club presidents of Monroe and West Monroe containing information on the Wagner bill.

The Woman's Auxiliary of the Iberville Parish Medical Society had its first meeting December 9 and from the following report it was a big meeting and a most successful one.

The following report was rendered by the treasurer:

Hospital Fund	\$373.68
Checking Accountant	487.96
Charity	61.03
Maintenance and Entertainment...	141.11
Miscellaneous	96.11
Bond Fund	244.44
(Also six Series F Bonds at \$74.00 have already been purchased and the \$244.44	

in the Bond Fund will be used in the January Bond Drive.)

Revenue from machine during the Auxiliary's inactive months was as follows:

May	\$128.00
June	49.50
July	80.35
August	142.75
September	72.15
October	60.50
November	107.00
Total	\$620.20

Disbursements were as follows:

Sept. 6, Flowers.....	\$ 5.11
Sept. 14, 5 Series F Bonds.....	370.00
Oct. 5, Flowers.....	10.00
Oct. 8, Hygeia.....	4.70
Oct. 30, United War Relief.....	25.00
Total	\$409.70

A letter from Mrs. Taquino, our president, was read in reference to the collection of discarded instruments for the Medical and Surgical Service kits. Dut to the smallness of our locality,

very little could be accomplished by the collection of the muchly needed instruments so it was voted to send a check for \$50.00 to the Medical and Surgical Relief Committee of America, 420 Lexington Ave, New York.

It was also moved and seconded to give the following organizations:

Indigent Widows Fund	\$10.00
Anti-Tuberculosis	25.00
Iberville Parish Red Cross.....	35.00
Jane Todd.....	2.00
La. State Society for Crippled Children	25.00
Infantile Paralysis.....	10.00

The Layette Chairman was authorized to buy new layettes; one to be used in the summer and one in the winter.

It was a very busy meeting and a delightful social affair. Mrs. Levy extended an invitation to have the next meeting with her in January.

We want to thank the Iberville Parish for this fine report and offer our sincere congratulations and hope for the continuation of such work during the coming year.

Mrs. M. C. Wiginton,
Chairman, Press and Publicity.

BOOK REVIEWS

The Infectious Diseases of Domestic Animals: By William Arthur Hagan, D. V. M., D. Sc. Ithaca, N. Y., Comstock Publishing Co., 1943. Pp. 665. Price, \$6.00.

This is an excellent textbook of veterinary microbiology written by the Dean of the faculty of Cornell University Veterinary College. After a brief introductory discussion of the principles underlying the infectious process and immunological responses of the host to the introduction of the parasite, the author considers the various microorganisms encountered as etiologic agents of veterinary diseases. These include not only bacteria and viruses but also fungi and protozoa; for each there is a description of morphological and cultural characteristics, an outline of the modes of infection and mechanisms of resistance, the methods of diagnosis and control measures. No attempt is made to treat the subjects exhaustively but any person familiar with the contents of this book will have a good background for the study of veterinary infectious disease in the laboratory or field. All investigators working with experimental animals ought to have this book available for ready reference, in case they suspect or encounter pathologic conditions due to natural infections. The format, typography and illustrations are a credit to the publisher as well as the author.

MORRIS F. SHAFFER, Ph. D.

Virus Diseases: By members of the Rockefeller Institute for Medical Research. Ithaca, N. Y., Cornell University Press, 1943. Pp. 170. Price, \$2.00.

Six of the outstanding Rockefeller Institute investigators of virus diseases have embodied in this excellent book the lectures which they delivered in 1942 at Cornell University under the Messenger Lecture Series. Other workers on viruses are indebted to Dr. Rivers, Stanley, Kunkel, Shope, Horsfall and Rous for the admirably comprehensive summaries of recent work in the fields of their respective interest as well as the thought-provoking and stimulating indications of some of which the gaps remain to be filled in the fabric of our knowledge. The book is particularly interesting since it brings together in a compact form the current scientific approaches to the problems involved in the study of plant viruses, as well as those of mammalian virus diseases (e. g. vaccinia, influenza and transmissible tumors).

At the low price of this volume, a new reprinting should be necessary in the near future.

MORRIS F. SHAFFER, Ph. D.

Geriatric Medicine: By Edward J. Stieglitz, M. S., M. D., F. A. C. P. W. B. Saunders Co., Philadelphia, 1943. Pp. 887. Price, \$10.00.

In the foreword of this book Dr. Lewellyn F. Bar-

ker points out that "The time is ripe for the appearance of a treatise on geriatric medicine suited to the needs of the general medical practitioner." This may seem like a trite statement but is a true one. The number of older people in this country is increasing almost by leaps and bounds and these old people require the service of a physician almost to the same degree as babies and children who are given care by the pediatrician. As a matter of fact, it seems quite likely that medical curricula within the next few years will have to devote almost as much time to diseases of old age as to diseases of infancy. While there may not be as many old people as there are babies of course, nevertheless the baby soon moves from the age of childhood into that of adolescence, but old people often keep on living and living and relatively they make as big a demand upon the time of the physician as do small children.

The book is edited by Stieglitz who contributes several well worth while chapters. For the other chapters and sections the editor has picked a group of men who can speak with authority and who can write good sensible advice about the aged. It hardly seems necessary to list all of the contributors, of whom there are some fifty-four. The material presented by Amberson, Carlson, Faust, Keefer, Oliver, Piersol, Reimann and Sebrell and the other authors is bound to be factual and authoritative.

The book is divided into eleven sections and subdivided again into a series of chapters. As would be expected, the greater amount of space is devoted to disorders of the circulatory system than to any other one system. This does not mean, however, that the alimentary system, the genito-urinary system, the blood, the central nervous system and other divisions of the body have been neglected; they have been covered well.

I believe this book would be of inestimable value to practitioners of medicine. There is a great deal that the physician does not know about disease as it exists in older people. Here he can obtain information which will be of very real value to him in his practice among the older generation.

J. H. MUSSER, M. D.

The Role of Nutritional Deficiency in Nervous and Mental Disease: Proceedings of the Association for Research in Nervous and Mental Disease, 1941. Baltimore, Williams and Wilkins, 1943. Pp. 215. Price, \$4.00.

The almost inconceivable food requirements of our armed forces and our allies leave considerably less for home consumption than was formerly available. At the same time civilian activities must bear physical and mental burdens far greater than heretofore believed possible. For these and other reasons the data recorded in this volume are of great value.

In Chapter VII there is an interesting and important explanation of the discordant results at-

tributed to vitamin A deficiency upon the nervous system. The treatment of the valuable material presented in Chapters XV and XVI is very lucid.

This book might well serve as a model for anyone who desires to do work in this field of research. It represents constructive effort and criticisms at its best. In its highly controversial field an attitude of tolerance, impartiality, and detached evaluation is maintained.

Although much of the material is highly technical the level of exposition is such that any educated reader should be able to understand the presentation without difficulty. Clarity and accuracy are of a high order.

Obviously, such a book will not appeal to a large number of readers but it suggests interesting methods of attacking the problems involved. Only time can determine if they are the methods best suited to the large and vital issues under consideration.

Excellent bibliographical citations are included.

C. P. MAY, M. D.

Nature and Treatment of Mental Disorders: By Don Thomas Verner Moore, G. S. B., Ph.D., M. D. New York, Greene & Stratton, 1943. Pp. 312. Price, \$4.00.

Any idea that this is an elementary, uneven, diffuse book is quickly dispelled by delving into it. The wisdom, experience and eminence of the author also make it of contemporary value.

Early in the text Doctor Moore states "a mental disorder is not so much a disturbance of inter-cellular connections as it is an over accentuation of emotional experience or the upsetting of one's mental adjustment by the destruction of all possibility of attaining objects of desire upon which one's heart has seen set."

In Chapter III there are some interesting statistics concerning celibacy and mental illness. The author writes "it would seem that psychotic reactions have a tendency to develop wherever there is a condition of profound discontent whatever the cause. If sexual disorders are a factor in the development of the psychotic conditions, this does not come about through any necessary essential relationship between sexual maladjustment and psychotic conditions but by way of the paths of general discontent. Mental disorder is associated with maladjustment in general rather than with any specific type of maladjustment."

On page 126 it is stated that when a patient goes to a psychotherapist he has a definite "will to health" or he would not go. But when he starts treatment, this will to health becomes less and less because he expects the therapist to make him sound. A psychiatrist can only help a patient to see himself in a true light. The patient must work out a solution.

With reference to Educational Therapy there is a statement on page 215 that not all disabilities are rooted in the pathology of the home but many

have their origin in the school and can be cured by remedial teaching.

Chapter XVI, Hysterical Manifestations in Children, is most important and the material appearing therein is treated with unusual clarity.

This book has other values, too. Anyone who uses it will profit.

C. P. MAY, M. D.

The Modern Treatment of Syphilis: Edited by Joseph Earle Moore, M. D. Springfield, Illinois, Charles C. Thomas, 1943. Pp. 717. Price, \$7.00.

This book is not profusely illustrated nor does it attempt detailed clinical descriptions of syphilitic lesions. It is a monograph presenting the significant features of the major problems associated with the syphilitic infection of the host and the community. The armamentarium necessary to manage each phase of this syphilitic invasion is amply described. Whenever possible, materials are critically examined by statistical methods and presented in table form. In the infection of the host, the subject matter is orderly arranged according to the broad diagnostic categories of each of the manifestations of early and prenatal syphilis in addition to separate treatment of congenital and late syphilis. The inclusion of the results of animal and clinical experiments in the rapid treatment of early infectious syphilis brings the book reasonably up to date. A comprehensive review of procedures applicable to the control of syphilis among naval, military and selected civil groups is presented. Each of the thirty-four chapters in this work is supplemented with an extensive bibliography, invaluable to the student. This authoritative volume, written in a direct and simple style, will be helpful not only to the specialist, but particularly to the clinician and student confronted with problems in any phase of the control of a syphilitic infection.

GEORGE LEIBY, M. D.

The Fundamentals of Endocrinology and Practical Endocrinotherapy: By Max R. Rubinstein, M. D. Chicago. Research Publishing Company, 1943. Pp. 417. Price, \$8.00.

This book is exactly what it is represented to be, an outline or perhaps a brief tabulation of those characteristic features of the endocrine disturbances which the author considers essential.

The subject matter is comprised within four divisions of which the first part is the most extensive and contains discussions of the physiology and functions of the glands.

The second part consists of glandular disturbances including etiology, pathology and clinical findings very well tabulated for ready reference in diagnosis.

The third division comprises a series of rather crude line drawings intended to illustrate physical aberrations easily apparent to the eye, while the fourth and last part considers the subjects of

obesity, sterility, and a few other subjects which may or may not have backgrounds of endocrine or vitamin deficiency. Finally, in this section are included the necessary laboratory procedures, but without specific directions for estimating amounts.

The book is a resumé, and a very abbreviated one. It is in no sense a volume one would refer to for detailed or theoretical discussions on most points in recent literature. That it is not intended to be such is evident from the structure of the text. Doubtless students would profit by using it.

L. C. SCOTT, M. D.

Text-book of Pathology; an Introduction to Medicine: By William Boyd, M. D., LL. D., M. R. C. P. Ed., F. R. C. P., Lond., Dept. Psych., F. R. S. C. 4th ed. rev. Philadelphia, Lea and Febiger, 1943. Illus. pp. 1008. Price, \$10.00.

In his fourth edition the author has sacrificed none of the "story telling style" which has made his previous editions so popular. Although shortened 56 pages through the deletion of certain chapters and "a tightening of the verbal belt," so aptly described by the author, many new and timely revisions and paragraphs have been added, making the book more complete and better without sacrificing the style so characteristic of the author.

His penchant for adding realistically appropriate comments comes home like a "letter from London" in mentioning that "venous thrombosis has occurred in elderly patients who have spent long winter nights sitting in deck chairs in an air raid shelter eventuating in some instances in pulmonary embolism."

In teaching pathology one must occasionally err on the side of didacticism in order to bring clarity and order to his presentation and probably inspire such statements that embolic glomerulonephritis occurs only in subacute bacterial endocarditis. Also, such statements that the best results in radiation are seen in very anaplastic carcinoma of the cervix places too much weight on the histological, and minimizes far more important factors.

There have been many improvements over the previous editions and only a few can be mentioned. The chapter on immunity has been left out. The addition of sarcoidosis and its relation to neo-parotid fever is very timely. One wonders, however, why the characteristic tuberculin anergy was not included. Virus pneumonia has been added. However, the chapter on virus and rickettsial diseases occupies the same space as in the previous edition. Many additions like, Fiedler's myocarditis, disseminated lupus erythematosus, radiation, pneumonitis, erythroblastosis fetalis, Marchiafava-Micheli hemoglobinuria, are timely and well presented. The addition and emphasis of lycopodium peritonitis is of practical value to both the surgeon and surgical pathologist. The reviewer can well appreciate this as it was one of the problems that he encountered early in his training in pathology. Some of the newer and interesting developments of

the role of the mast cells of Erlich to the formation of heparin are of value. Vitamin "K" has been dealt with admirably in this edition.

On the whole the chapters are lucidly written. Those on the heart and vessels are well written. There has been a rearrangement and improvement concerning the etiology of tumors. The chapter on central nervous system is good and includes additions on equine encephalitis. The colored plate on subdural hematoma beautifully illustrates this condition. More illustrations and colored plates are present in this than the third edition.

On the whole the book is an improvement on an already good edition. The material has been brought up to date and many new features added. Its lucid style and descriptive inferential phrases are pleasing. It is very easy to read and highly informative, and should be a "must" addenda to the practitioner as well as the students collection. One should have no hesitation in recommending it.

BJARNE PEARSON, M. D.

Gynecology With a Section on Female Urology: By Lawrence R. Wharton, Ph. D., M. T. Philadelphia, W. B. Saunders Co., 1943. Illus. pp. 1006. Price, \$10.00.

This is a large (1006 pp), well written, well illustrated textbook on gynecology and associated urological conditions. The medical, preventive, functional and organic aspects of diseases of the female are rather fully considered, and thoughtfully evaluated.

The many illustrations are well selected, and of excellent quality, though largely from secondary sources.

While one may pick many minor quarrels with the author (i. e., acceptance of Samuels' spectroscopic blood method of determining ovulation; Clow's treatment of dysmenorrhea; restoration of fertility in 35% of women under the age of 40 following myomectomy; etc.,) the book is a very worth while and useful text for medical students and physicians, and should be well and widely received.

B. B. WEINSTEIN, M. D.

Essentials of Gynecology: By Willard R. Cooks, M. D., F. A. C. S. Philadelphia, J. B. Lippincott Co., 1943. Illus. pp. 474. Price, \$6.50.

This is a text primarily designed for the medical student and general practitioner, and proposes "to present concisely, from the practical viewpoint, and with as much correlation as possible, the salient features of the anatomy, pathology, symptomatology and therapy of gynecology." This is successfully done to a large degree.

The book is well illustrated and unusual in that most of the illustrations used are original. The line drawings are of real teaching value, the photomicrographs are clear and well selected. It is a good general gynecological book, but it contains sins of omission (e. g., failure to include descrip-

tion of bimanual examination), and sins of undue emphasis and arrangement (the chapter on functional diseases contains such variants as dyspareunia, dysmenorrhea, sterility, ectopic pregnancy) such that I do not feel that it is to be recommended for the purpose for which it was written.

B. B. WEINSTEIN, M. D.

Finger Prints, Palms and Soles: By Harold Cummins, Ph. D., and Charles Midlo, M. D. Philadelphia, The Blakiston Co., 1943. Illus. pp. 309. Price, \$4.00.

As would be expected from the master pens of Cummins and Midlo this is an excellent monograph, of far wider interest than the idea "fingerprint" usually provokes.

As the authors point out "There is a prevalent but mistaken notion that dermatoglyphics have no importance beyond their use in personal identification. Perhaps because the publications of research are scattered, and the generalizations seemingly hidden in complexities of descriptive method, it is not generally appreciated that the patternings of epidermal ridges on fingers, palms, toes and soles have broader and more fundamental significance. The configurations are formed in the early fetus and they persist unchanged. Their variants exhibit differential trends among races, between the sexes and among constitutional types. Dermatoglyphics also elucidate various morphological principles, including bodily symmetry. Some traits of the dermatoglyphics are heritable, hence they are useful in recognizing the types of twins and have promise of application in cases of questioned paternity. With these and related topics forming its central theme the present volume is designed to fill the want of a comprehensive treatise on dermatoglyphics."

The book is divided into three parts, and a useful working bibliography is appended. Part I considers the historical development and a general orientation of the field, Part II deals with methods and descriptions and Part III is devoted to the more fundamental biological phases of dermatoglyphics.

The first and third parts will be of greatest interest to physicians. The middle section, dealing with methods is somewhat difficult reading, not overly so for a technical discussion, and readily grasped by those with a modicum of scientific training and vocabulary.

This book fills a definite need, and should be widely and gratefully accepted and read.

B. B. WEINSTEIN, M. D.

Nervousness, Indigestion and Pain: By Walter C. Alvarez, M. D. New York, Paul B. Hoeber, Inc., 1943. Pp. 488. Price, \$5.00.

After well spent, truly profitable, hours reading this latest Alvarez contribution the reviewer is uncertain as to whether it was intended for the laity or the medical profession. It is well, for the successful sale of the volume, that it was reviewed,

frankly advertised, by "Time"; this is not exactly the endorsement one seeks for a contribution to medical literature. The attention granted by "Time" will bring readers from the laity who, in their inability to enjoy and understand the volume, will bring criticism not primarily upon Alvarez but upon the medical profession who seemingly are revealed in their errors. The reviewer hopes this is merely an assumption on his part and that the book was neither designed for nor will it be widely read by patients.

Medically, it is an epic. This is psychiatry simplified and practically applied. A physician can read the content with ease and recount situations applicable to his experiences. The ease of presentation is remarkably simplified, though thoroughly scholarly, yet so interestingly readable. Never has the reviewer found such a wealth of knowledge and intimate instruction without tedious study.

Through thirty-four chapters covering four hundred and eighty-eight condensed pages one finds an unparalleled coverage of the psychiatry of gastroenterology. Many humorous illustrative incidents are related. Errors of diagnosis, organic or functional, are revealed with the ease of familiarity depicted. In the pseudo-diseases Alvarez brings to attention the mimic psychoneuroses can be. The pseudo-appendicitis and pseudo-cholecystitis descriptions should be emphasized, as they are here, to internist and surgeon that the "pseudo" aspect may be realized to prevent too many surgically managed patients.

Actual psychiatric entities, constitutional inadequacy, insanity, types of neurotic persons, menopause, are amplified and applied in a manner that will interest the psychiatrist.

Food allergy, actual and pseudo, is presented but the author is less interested in this "entity" than was expected; he refuses to be definite.

Headaches, migraine and migraine equivalents and many other symptom complexes which are headaches to all physicians are investigated.

The reviewer will read this book many times before he will be satisfied that he has gained all that he can from this contribution. He and other readers, physicians or students, will be better thinkers in the investigation of those "sensitive souls" afflicted with many symptoms. Finally, regardless

of the author's intention, I feel this is a contribution to medical literature alone and not suited for the laity. I hope the earlier blight of a Time review and an J. A. M. A. endorsement does not mislead anyone to offer it to the patient other than to illustrate applicable sections.

Doctor Alvarez has been generous to give us so complete an insight into his sanctum.

GORDON MCHARDY, M. D.

PUBLICATIONS RECEIVED

Paul B. Hoeber, Inc., New York and London: Human Constitution in Clinical Medicine, by George Draper, M. D., C. W. Dupertuis, Ph. D., and J. L. Caughey, Jr., M. D., Med. Sci. D. Medical Parasitology and Zoology, by Ralph Welty Nauss, B. Sc., M. D., Dr. P. H.

J. B. Lippincott Company, Philadelphia, London and Montreal: Essentials of Dermatology, by Norman Tobias, M. D.

Columbia University Press, Morningside Heights, New York: Health Education on the Industrial Front, the 1942 Health Education Conference of the New York Academy of Medicine.

Harper & Brothers Publishers, New York and London: Childbirth without Fear, by Grantly Dick Read, M. A., M. D. (Camb.)

MacMillan Company, New York: At the University Press, Cambridge: The Permeability of Natural Membranes, by Hugh Davson, D. Sc. and James Frederic Danielli, D. Sc., A. I. C.

The Williams & Wilkins Company, Baltimore: Applied Dietetics, by Frances Stern.

The Johns Hopkins Press, Baltimore: On the Influence of Trades, Professions, and Occupations in the United States, in the Production of Disease, by Benjamin W. McCready, M. D. Maurice Arthus' Philosophy of Scientific Investigation, translated from the French by Henry E. Sigerist.

Envio del Instituto Nacional de Sandid, Madrid, Spain: Estudio Experimental de Una Cepa Apatogena e Immunizante de Rickettsia Prowazeki. Cepa E, by G. Clavero y F. Perez Gallardo. Tecnicas de Laboratorio en el Tifus Exantematico, by Prof. Dr. G. Clavero del Campo and Dr. F. Perez Gallardo.

Houghton Mifflin Company, Boston: Safe Deliverance, by Frederick C. Irving, M. D.

New Orleans Medical

and

Surgical Journal

Vol. 96

MARCH, 1944

No. 9

MATERNAL AND CHILD WELFARE IN NEW ORLEANS

RUPERT E. ARNELL, M. D.†

AND

JOHN M. WHITNEY, M. D.‡
NEW ORLEANS

The value of an adequate program of maternal and infant welfare is now generally recognized. Adequate care begins ideally with early and constant prenatal care and is followed, in a broad, continuous program of maternal and infant welfare, by intrapartum, postpartum, puerperal and pediatric care. All of these services are essential to a complete program, all are of equal importance and all should receive equal stress. It is true, for instance, that the most careful supervision during pregnancy cannot compensate for inadequate attention or poor judgment during parturition and the puerperium, but it is equally true that the most skillful delivery cannot compensate for inadequate prenatal care. And furthermore, the most competent obstetric care loses much of its value if infant mortality is high and babies are doomed to die through lack of pediatric care during the first years of life.

The many benefits accruing to mother and baby from continuous care and supervision are so obvious on even cursory examination of mortality and morbidity statistics that other valuable results frequently are overlooked. Yet they are of prime im-

portance in modern medicine. For example, periodic health examinations may be initiated at this time, continuing throughout life, employing all measures available for prevention, early detection and treatment of disease. Improved family health would be a direct result; community health would benefit indirectly. Finally, an adequate program in New Orleans would offer unexcelled facilities for teaching purposes not only in obstetrics and pediatrics but in the fields of public health as well. Recognition of New Orleans as an outstanding medical center derives in great part from efforts and activities devoted to medical education; we could ill afford persistently to ignore improved and advanced teaching methods in the instruction and training of physicians, medical students and nurses. Present-day teaching in obstetrics entails more than a course of didactic lectures and some practical instruction in the labor and delivery rooms. For really effective instruction all phases of maternal welfare must be considered, not only by means of theoretical discussion, but, of much greater importance, through demonstrations and observations on the clinical service. Students, interns and residents are not impressed by outlines on the management of syphilis complicated by pregnancy, for instance, if they learn that no facilities exist locally for the treatment of antepartum syphilis or for the follow-up on babies having congenital syphilis. Neither are they impressed with the value of postpartum care if patients are sent home shortly following delivery without the routine care so strongly advocated in lecture. In modern medical training instruction by example, by deed rather than

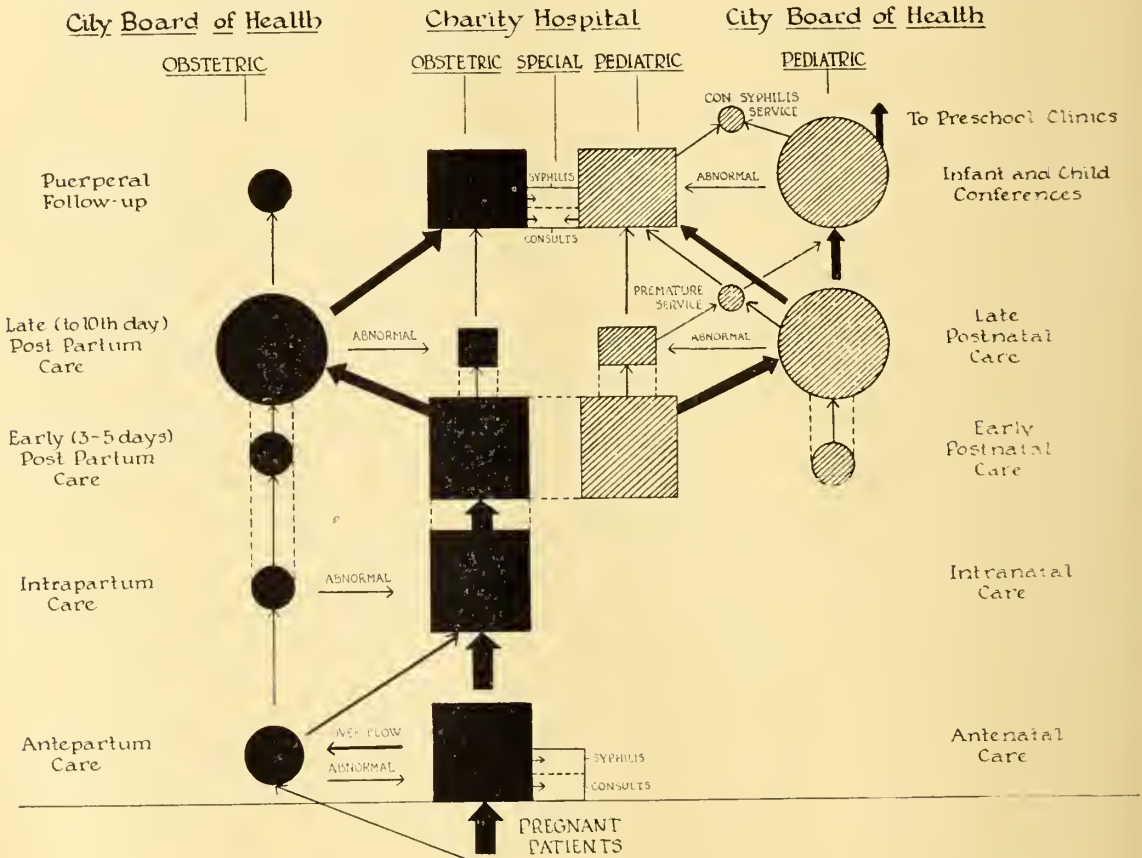
†From the Department of Obstetrics and Gynecology of Louisiana State University School of Medicine.

‡From the New Orleans Health Department.

by word alone, is mandatory. Observation of the ultimate as well as the immediate results of treatment is essential not only for accurate evaluation of therapeutic endeavors but for effective teaching.

Although the requisites of an adequate program are well known, the means for practical application frequently are lacking and the system remains a theory rather than a fact. Because an extensive and impartial investigation disclosed that this was apparently true to some extent in the New Orleans area, the recently organized Bureau

and nursing personnel was made available, together with clinic space and equipment. Agencies subscribing to a policy of collaboration and cooperation with the Bureau included the Charity Hospital, the departments of obstetrics and pediatrics of Louisiana State University and Tulane University and the Child Welfare Association. The three services at Charity Hospital, Tulane, Independent and L. S. U., supply the great majority of patients, referring both white and colored mothers and babies to the City Board of Health for supervision and follow-



Integration of Maternal and Child Welfare Activities in New Orleans.

of Maternal and Child Health of the New Orleans Health Department proposed, in September, 1941, that an attempt should be made to integrate the various components active in maternal and infant care, and to augment the existing facilities or furnish new services when indicated. For accomplishing these ends a specialized medical

up. Such close integration of activities not only facilitates the program for adequate obstetric and pediatric care but obviates the overlapping and duplication of services that otherwise would be unavoidable. All unnecessary work and expense are eliminated, a most important feature in tax-supported medical service.

The objectives of the program as organized in New Orleans are:

1. To lower maternal and infant mortality and morbidity by giving continuous care, instructions and supervision throughout the maternity cycle to mothers who are unable to pay for the services of a private physician.

2. To furnish continuous pediatric care for infants by means of well-baby conferences.

3. To relieve the serious congestion in the obstetric and pediatric clinics and wards of the Charity Hospital.

4. To initiate and stimulate interest in obstetric and pediatric follow-up examinations and to furnish an organization for this work.

5. To assist in an effective educational program for patients and for the medical and nursing professions.

6. To assist in developing a cooperative program with all of the public health agencies in the community.

7. To provide satisfactory service at low cost.

ORGANIZATION AND ACTIVITIES

The Bureau of Maternal and Child Health is organized under the supervision of a director, aided by consultants for the specialties of obstetrics, pediatrics and syphilology. The medical staff consists of 15 part-time physicians, eleven pediatricians and four obstetricians, compensated on an hourly basis. The nursing staff includes a director, an obstetric and a pediatric instructor, seven supervisors, six obstetric nurses and 60 to 70 field nurses available for general service.

Up to the present time the Bureau has accepted responsibility for the organization, establishment, supervision and maintenance of five types of clinical service with activities which may be summarized briefly:

The *Obstetric Clinic Service* offers medical and nursing supervision for adequate antepartum and postpartum care in six decentralized clinics. These clinics are located in districts, such as Algiers, which are rather inaccessible to Charity Hospital, and are convenient for patients who otherwise

would be forced to travel long distances in order to attend the critically over-crowded hospital clinics. Separate teaching clinics are maintained for the care of patients scheduled for delivery on the Tulane and L. S. U. Home Delivery Services. Clinics are also maintained for white patients in a strictly limited income group, who desire complete care including home delivery for a small fee because they cannot afford private facilities and are ineligible for or will not accept charity.

As special features, in addition to routine care, chest x-ray is mandatory, and each mother attends a course of instruction in personal hygiene and infant care.

Twenty-two clinic sessions are scheduled each month, the average census totals 360.

The *Home Delivery Service* furnishes nursing care throughout the intrapartum and postpartum periods to patients who desire to be delivered at home. These facilities are available for the use of private physicians as well as for the medical schools. Medical care is provided for the white patients in the low income group. The home deliveries average 40 per month.

The *Postpartum Nursing Service* provides postpartum and postnatal nursing care and supervision in the home for normal patients who deliver at Charity Hospital but are permitted to return home prior to the sixth day postpartum. Normal patients are discharged from the hospital and referred to the service on the third day after spontaneous delivery and on the fifth day after episiotomy and forceps. The postpartum hospitalization period is thus reduced by at least five days. Experience with more than 6000 patients has demonstrated no ill effects either immediate or remote; in fact, these patients seem to enjoy a more natural puerperium. This is a unique service which deserves further investigation because it affords a solution for the overcrowded maternity wards, a problem now confronting practically all hospital authorities. By referring more than 3000 patients yearly Charity Hospital releases 30,000 beds and bassinets, an economy of perhaps \$75,000.00.

Nursing service in the home following hospital delivery also is available for a limited number of abnormal patients who might need special nursing attention under the direction of the hospital physician.

The *Pediatric Clinic Service* offers complete medical and nursing supervision for babies born at Charity Hospital or in the home. It should be emphasized that well babies only are accepted and that the service is concerned primarily with problems of nutrition, growth and development, immunization and special tests. An organization is provided to cooperate with the pediatric services at Charity Hospital in the management of premature infants. The Bureau maintains 86 clinics, in 16 locations, with a monthly attendance of more than 2500.

The *Syphilis Service* offers all facilities for the detection and treatment of maternal and congenital syphilis. Of particular interest is the family contact and follow-up work. Each month therapy is administered to approximately 100 mothers and 30 babies and supervision given to approximately 50 babies in the potential congenital syphilis group.

The Bureau was fortunate indeed in securing excellent housing facilities for clinics in districts which are heavily populated with the low-income families most needful of proper medical care. Every effort was made to establish clinics in localities far removed from existing facilities, thereby providing decentralized service. Sixteen clinic stations have been established; five are located, expense free, in Federal housing projects.

The Bureau has been fortunate too in the cooperation and aid afforded by the various individuals and institutions concerned with the problems of maternal and child health in New Orleans. Without the cordial and concerted agreement and participation of Charity Hospital, the medical departments of Louisiana State University and Tulane University, the Child Welfare Association and other groups and agencies, the policies could not have been formulated nor the joint program activated. All plans were

approved by representatives of organized medicine.

SUMMARY AND CONCLUSIONS

1. Minimum requisites for an adequate program of maternal and child welfare include constant care and supervision of the mother during pregnancy, parturition and the puerperium, and of the baby during infancy and childhood.

2. Benefits resulting from a broad continuous program can be measured not only in improved health but in more effective medical instruction through demonstration and example.

3. Activities of the Bureau of Maternal and Child Health of the New Orleans Health Department are described, objectives are outlined and census data presented. All activities are coordinated to operate in a program of close collaboration with Charity Hospital, the Tulane and Louisiana State University Medical Schools and the medical profession.

4. Indications for continuing the program are evidenced by the gratifying results achieved in the relatively short period of time it has been in operation.

—o—

THE INDUSTRIAL HYGIENE PROGRAM TODAY*

J. G. TOWNSEND, M. D.†
BETHESDA, MD.

In the first of this series of lectures, we have seen that the problem of industrial hygiene is three-fold: it embraces all the potential hazards and dangers that the worker encounters on the job; it involves the character of the labor force itself; it includes all factors of the worker's home or community environment which help or hinder him on the job.

We have seen that war has doubled and trebled our industrial need and our industrial speed. We have seen that the workers

*Presented before the Seventh Annual Meeting, The New Orleans Graduate Medical Assembly, March 15-18, 1943, New Orleans.

†From the Division of Industrial Hygiene, National Institute of Health, Bethesda, Md.

are not only brought face to face with tremendous physical and chemical forces, but their living and working conditions are vastly changed.

How, then, are these industrial health problems being met in wartime America? The war program of industrial hygiene was outlined early in 1941 and approved by the Health and Medical Committee of the Office of Defense Health and Welfare Services. The three major objectives of the program are: (1) to continue and expand essential research; (2) to extend the application of industrial hygiene knowledge through assistance to war industry, including governmental establishments, and to the professions; and, (3) to augment the reservoir of trained personnel in the industrial hygiene field.

Industrial hygiene activities at the Federal level closely parallel this outline. In fact, the Division of Industrial Hygiene, National Institute of Health, promptly adopted this program for the duration. The Division is composed of three major sections: the Sections on Research, Dermatoses Investigations, and States Relations, supplemented by specialized professional units: Medical, Engineering and Statistical.

The first phase of the industrial hygiene program today—research and investigation—is being carried forward by our Sections on Research and Dermatoses Investigations aided by the Units. I have described much of our research in a previous paper.

I might add, however, that the Section of Dermatoses Investigations studies various dermatoses problems in industry, determining causes, and making recommendations. Requests for assistance are received from Federal, state, and local governmental agencies, and from industrial establishments themselves. Many of the field investigations made at the present time are performed at the request of the Ordnance Department of the United States Army.

In the field of dermatoses research, work is being done on vesicant war gases as an important potential cutaneous hazard. The lack of effective protective measures, especially for the civilian population, makes

research in this field imperative. A neutralizing agent is sought as an agent suitable for incorporation in a protective ointment. The suitability of various materials for protective clothing has also been investigated.

One of the most troublesome conditions encountered among industrial workers is fungus infection of the feet. Studies involving both laboratory and field investigations are being made at the present time to determine how these infections are acquired and how they may best be prevented.

The Medical Unit performs epidemiologic investigations in plants together with engineers, chemists, and physicists. The medical staff is especially concerned with health and physical qualifications, whereas the other specialists point their investigations at environmental factors.

A few of the subjects studied in recent years are: silicosis and other pneumoconioses; metal fume fever in brass foundries; intoxications by such metals as lead, mercury, and manganese; compressed air illness, carbon monoxide; benzol; fatigue, and evaluation of physical impairments. The maximal permissible levels of atmospheric contamination are studied. Most of the investigative work has been cut to a minimum for the duration, and emphasis has been placed on applying our present knowledge.

The Engineering Unit serves as an advisory and fact-finding body. In many instances, this Unit is called upon to assist states and other governmental agencies in conducting investigations. Among the more common conditions studied are lighting, heating, inadequate ventilation, and numerous toxic exposures.

The Research Section of this Division is engaged in a wide variety of studies previously discussed. Our researches are directed exclusively to war problems; much of the work being conducted is for the Army and Navy, and therefore of a confidential nature.

It should be evident by now that the entire resources and facilities of the Division of Industrial Hygiene are at the disposal of all Federal, state, and other govern-

mental agencies, as well as labor and industry.

To solve industrial hygiene problems in the laboratory is one thing. To solve practical everyday industrial hygiene problems in the plant is another. Yet that is exactly the gap we must bridge to make our work effective. We must put across to industry the newer and better methods we have discovered, and show why and wherein their advantage lies.

The practical application of industrial hygiene methods in industry is carried out by the States Relations Section of the Division, which also acts as a clearing house for the war field activities. The Section renders services to industry, both directly and in cooperation with state units.

It gives administrative and technical advice to the units for the purpose of standardizing industrial hygiene practice throughout the country. To achieve this end, the Section has professional personnel constantly in touch with the state and local units, receives uniform reports on the work of the units, and analyzes these reports so as to be able to determine what advice and assistance the states need for strengthening their programs.

The Section also coordinates the training of personnel for various agencies, both official and nonofficial; renders field services to certain industrial military establishments; publicizes industrial hygiene methods through a workers' health education program; and cooperates with other agencies at the Federal, state and local levels, on all matters related to field activities in industrial hygiene.

One of the most important services performed by this Section is the inspection of Government industrial plants for the War Department. Seventy plants certified by the War Department for inspection have been investigated by crews composed of physicians, engineers and chemists, and reports on findings and recommendations have been submitted. In addition, a certain number of reconnaissance surveys were made in plants which were not in full production,

but for which recommendations were made in the interest of health conservation.

As a further step in the integration of industrial hygiene services for the War Department, the Public Health Service, at the request of the Secretary of War, has assigned from the Division of Industrial Hygiene a physician and an engineer to the headquarters of the Safety and Security Branch of the Office of the Chief of Ordnance in Chicago. These two officers, in addition to a medical officer assigned by the Office of the Surgeon General of the Army, advise on industrial hygiene matters and expedite the adoption of best industrial hygiene practices throughout Ordnance plants.

Another important function of the Section is to recruit and train personnel for assignment to industrial hygiene work with state and local units. Essential field and laboratory equipment is also loaned to many of the states, thereby permitting them to carry on their work more effectively.

The States Relations Section also promotes industrial nursing consultant services in state health departments. As a result, considerable progress has been made during the past two years in industrial nursing. At present there are 18 states which have nursing consultants who are rendering valuable aid to industry, both in the extension of nursing services and also in better utilization of existing industrial nursing services.

The promotion of industrial dentistry through state and local health departments is coordinated through this Section. The program has for its aim the promotion of dental examination in preplacement and periodic examinations, coordination of the work of state dental and industrial hygiene divisions, and establishment of demonstration dental services in selected plants. The efforts of the dental consultant on industrial hygiene have resulted in the development of several programs within industry, and dental consultants in industrial hygiene shortly will be available in two of our important industrial states, Michigan and Illinois.

One of the methods employed in furthering interest and action in the field of industrial hygiene is the use of health education media. Like any other group of adults, war workers need similar information and training in health matters. If we wish them to work with us for better health on the production line, we must give them the opportunity to learn and to practice what they know.

Cooperative industrial hygiene programs have been developed with some of the war agencies. For example, the War Production Board has established 2000 labor-management production drive committees in war contract plants. Through the efforts of this Section, lists of these plants are supplied to state and local industrial hygiene units which, in turn, contact the committees in their respective states and offer their services. Each of these committees also obtains a copy of an outline of recommended industrial hygiene practices prepared and disseminated by this Section, which aids plants in the development of health conservation activities.

THE PROGRAM AT STATE LEVEL

Early in our emergency program, the Division could have developed a strong industrial hygiene organization at the Federal level. But in order to insure permanency and continuation after the war, it was thought wiser to utilize our emergency funds to strengthen the work in the states. It is hoped that through the personnel now on loan from the Division to the states, industry and labor will realize the value of industrial hygiene, so that the programs will remain after the war and the personnel will be absorbed by the states.

At the present time there are industrial hygiene units in 38 states, six cities, two counties, one territory, and the Tennessee Valley Authority. These areas contain practically the entire labor force of the Nation, and the units at present have approximately 350 persons employed on industrial hygiene work. The amount of money spent by these state and local units is well over \$1,000,000. During the fiscal year 1942, reports received from 35 units in 29 states

show that services were rendered by them to 5,700 establishments employing 2,533,000 workers. An analysis of the activities of state and local units indicates that the programs should be expanded and the organizations strengthened to permit more follow-up work, the stimulation of occupational disease reporting, more health education work, and, in some instances, decentralization of the state unit for quicker and closer contact with the plants.

A glance at conditions in your State of Louisiana shows that this state has been predominantly an agricultural state. Yet it has a large shipbuilding industry and the number of Louisiana workers in this occupation increased from 1,300 in January, 1940, to 24,000 in 1942.

Here also is the largest chemical plant in the South,¹ the largest rice milling plant in the country,² a large shell loading plant, a munitions depot and an ammonia plant. I understand a magnesium plant, a butadiene rubber plant, and an aviation gasoline refinery are under construction.

It appears that your labor supply is adequate except for skilled workers. However, reports are that certain plants are experiencing high labor turnover occasioned by the employment of women, lack of housing facilities within convenient distance, lack of work experience, and by physical and health hazards in certain occupations, such as shell loading.

May I suggest that these plants with special problems to solve make the utmost use of the excellent industrial hygiene unit Louisiana has. An industrial hygiene unit, as you may already know, includes medical, chemical, and engineering personnel, as well as consultant services on numerous health problems.

When an industrial hygiene unit goes into any plant, it evaluates the potential hazards, analyzes the efficiency of existing health safeguards, and recommends necessary improvements.

¹Mathieson Alkali Works, Inc., Lake Charles.

²L. A. State Rice Milling Co., Inc., Lake Charles.

The chemist acquaints himself with the specific materials used in the plant. He determines which of the substances constitute potential or actual hazards to health. He is aware of the wide range of toxic exposures in manufacturing procedures. He knows that almost three million American workers are on jobs where organic dusts are potentially dangerous—jobs where by-products like carbon monoxide may reach dangerously high concentrations. He knows that three quarters of a million men work with lead and its compounds; a quarter million handle sulfur dioxide; a hundred thousand are exposed to chromium.

In the meantime, the engineer has been examining ventilation, lighting, safety equipment, workbench space and mechanical fatigue hazards. He must also plan for mechanical control of toxic exposures.

Armed with the facts and figures supplied by the chemist and engineer, the doctor checks the physical condition and clinical history of every worker in the plant. If there is a medical service in the plant, he works closely with the physician in charge. He advocates the preplacement examination, regular examinations on the job, and careful maintenance of absentee records.

The chemist, the engineer and the doctor pool their observations. The chemist may suggest chemical methods of control—substitution of nontoxic or less toxic materials for those in use. The engineer may suggest a better ventilation system. The doctor's job is perhaps more complex than his co-workers'. If the recommendations made by the chemist and engineer are not carried out or maintained at peak efficiency, the doctor is the first to note the storm signals as they appear in headaches, fatigue, stomach disorders, unexplained nervousness, and sudden drop in the blood count.

Some states have developed emergency educational programs for industrial physicians. Indiana, for example, has planned both an intensive two-day course and a three-weeks' course in industrial hygiene for private practitioners. About 80 per cent of Indiana's industry is serviced by part-

time physicians who, when given further training, will probably serve as a pool from which to draw any needed "full-time" industrial physicians.

THE PROGRAM AT PLANT LEVEL

An effective plant industrial hygiene program, as outlined by our Division, includes four types of service: medical, engineering, safety, and welfare. These four services plan for health and efficiency, taking into consideration conditions in the plant, in the home and community, and the health condition of the individual.

The plant medical service is the responsibility of the industrial physician. Whether he is employed part-time or full-time—this is his responsibility. In most cases he will be assisted by a professional staff, which in a large plant may include other physicians, nurses, technicians, and dentists. Under the supervision of the medical director, this group will furnish emergency care of employees disabled on the job; provide continued treatment of employees suffering from occupational diseases or accidents; examine all employees and executives annually; examine monthly all workers who are exposed to poisonous materials on their jobs; and in cooperation with the safety and engineering departments, will inspect all health and accident hazards on the jobs.

The medical service should also maintain, analyze and tabulate sickness records in the plant; cooperate with the personnel department in proper placement of new workers through the preplacement examination; promote a health education program for employees and their families and make plans for handling large numbers of injured in event of disaster.

The engineering and safety services are responsible for the detection and removal or control of environmental conditions in the plant which endanger health and safety. The industrial hygiene engineer is one who combines the "know-how" for the control of occupational diseases with the "know-how" for prevention of accidents, including practical experience in the maintenance of production. It is not always necessary for

a plant to have the full-time services of these specialized engineers, so it is suggested that plants use the services of governmental industrial hygiene bureaus to obtain surveys and consultation. However, it is advisable to appoint one responsible person, preferably an engineer, to work with the governmental industrial hygiene unit in making surveys and working out steps to be taken.

Only the largest industries have welfare departments for employees. Trained welfare workers are not a necessity, but some organization should be established to deal with workers' problems. The War Production Drive Committee perhaps might constitute itself a welfare service. A workers' committee might be formed. The committee should work closely with the medical service, personnel department, employees, and the executive offices.

Several problems not directly connected with the working environment will be the concern of the industrial hygiene program, the first of which is medical care for nonoccupational disability. A few large, progressive firms and labor unions have already developed excellent services for the care of employees and their families, including medical, dental, surgical, nursing and hospital care. On the whole, however, plant medical services have not yet broadened their scope to include this general medical care.

Other health matters to be considered are: adequate housing, sewage disposal, safe water, milk supply, restaurant inspection, inoculation against communicable diseases, and adequacy of medical facilities. The in-plant program should provide some means of putting every worker in touch with a well-qualified physician whenever sickness occurs in his family. Likewise, the nutrition program and problems of fatigue, night shift, and hours of work should concern the health service.

Health and safety education for workers and their families should be sponsored as part of a good industrial hygiene program. One of the most difficult tasks facing a plant industrial hygiene service is convinc-

ing the people who wear the respirators and the protective gloves and the safety hairnets that such devices are essential to their well-being. The preplacement and periodic physical examinations can be used to advantage by physicians for educational purposes. Here is an opportunity to drive home to the worker the importance of protective measures.

A general health education program can and should be scheduled in many plants. It might include talks, motion pictures, demonstrations, pamphlets, and posters.

THE LOCAL HEALTH DEPARTMENT

As I have suggested before, the industrial hygiene program ties in closely with the community health program. For example, the venereal disease clinic, the nursing service, the sanitation section, and the maternal and child health service must reach the industrial worker and his family directly, and preferably through the industrial hygiene service and the plant physician. The local health department, correspondingly, is the channel through which industrial hygiene services can be brought to bear directly on the health problems of workers in small plants.

As Sir George Newman has written: "In recent years we have learned that public health is not only a matter of the postponing of mortality and the prevention of sickness, but of the positive side of health—the increase of vitality, capacity, and efficiency of the human body. Our aim is not only to oppose diseases but to advance and develop physical fitness and well being. To secure this end, we must have regard to the whole life of man—his heredity and upbringing, his work and rest, his food, his habits, his environment. We must pay attention not only to his actual ailments and diseases, but to the conditions making for a maximum degree of personal health. Thus it comes about that a new relation is found to exist between occupation and health. In a word, the health of the industrial worker forms an integral and inseparable part of the health of the community."

It is for this reason that every state, county, and local health department has a

responsibility to cooperate with industrial management, labor, and private medicine in attaining their common goal—better personal and more efficient group health.

A complete industrial hygiene program depends upon industry, labor, public health, and private medicine. This truth is supported by the fact that two-thirds of the workers in this country are not provided with full-time or even part-time medical services at the plant. They depend upon their private physicians, or go without. This places an important responsibility upon the practitioner who sees industrial workers, either as their family doctor, as an industrial physician in the plant, or as a health officer.

The Federal, state and local industrial hygiene programs have the facilities and the function to provide such services as

investigation, consultation, personnel and training. No Aladdin's lamp is needed to call these public health utilities into action. A telephone will do the job!

The universal goal of medical men—private, industrial, and public health—is the creation of a healthier, more vigorous America. Wider application of industrial hygiene is one of the most important steps toward this goal.

Close cooperation between the physician in industry, in public service, and in private practice toward the betterment of workers' health constitute another important stride toward this goal. In this present world-wide conflict in which we have everything to gain and also everything to lose, we can and must bend every ounce of effort in this direction—the maximum health and safety of all workers.

A COMPARISON OF THE ZIEHL-NIELSEN AND THE MOSS COLD CARBOL FUCHSIN STAINS FOR ACID FAST BACILLI

DAVID KIRSCH, B. S.†

AND

JOHN R. SCHENKEN, M. D.†
NEW ORLEANS

This paper is a report on the results obtained comparing the conventional Ziehl-Nielsen with Moss' cold carbol fuchsin method for the staining of acid-fast bacilli. The essential difference between the two methods is that in the latter the prepared smears are first placed in commercial formalin for eight minutes, rinsed in water, and then placed in *cold* carbol fuchsin eight minutes. The remainder of the procedure is then the same as the Ziehl-Nielsen method—decolorization in acid-alcohol and then counterstaining with methylene blue.

MATERIALS

The sputa used in these examinations were selected at random from the daily specimens sent to the diagnostic labora-

tories of Charity Hospital from the patients in the Dibert Tuberculosis Hospital. The sputa received daily represented both known and suspected cases of tuberculosis.

METHODS

Each sputum was divided into two equal portions. One portion was autoclaved at 20 pounds of pressure for 30 minutes and the other portion was left untreated. Duplicate smears of each portion were prepared. In the unautoclaved material, smears were made whenever possible from the small yellowish caseous or yellowish-green, thick, mucoid portions of the sputum. In the autoclaved material, the sputum did not lend itself to the selection of caseous or mucoid plugs.

One of the duplicate smears was stained by the standard Ziehl-Nielsen method and the other by the Moss cold carbol fuchsin method. The Ziehl-Nielsen method which was employed consisted of staining the smear with steaming carbol fuchsin (dye content 94 per cent) for five minutes and decolorizing in acid-alcohol.

The Moss method consisted of flooding the dried smear with cold formalin for eight minutes, washing in water, and then staining with cold carbol fuchsin for one

†From the Department of Pathology and Bacteriology, Louisiana State University, and the Department of Pathology, Charity Hospital of Louisiana, New Orleans, Louisiana.

or two minutes. The smear was then washed, decolorized in acid alcohol, and then counterstained with methylene blue for 30 seconds.

The autoclaved specimens were also concentrated by centrifugalization for 30 minutes at 1500 r. p. m. One loopful of the surface film was removed and placed on a clean slide. To this was added a loopful of the sediment, and both were mixed together and smeared. These smears were stained by the cold carbol fuchsin method only.

The smears which were reported negative were all examined by covering the entire length of the slide once.

Method	RESULTS				
	Ziehl-Nielsen Unautoclaved	Moss Method Unautoclaved	Ziehl-Nielsen Autoclaved	Moss Method Autoclaved	Centrifuged Moss Method
No. of specimens.....	50	50	50	50	50
Total positive	24	24	21	23	25
Per cent positive.....	48	48	42	46	50

Essentially there is no difference in the percentage of positive results obtained between the Ziehl-Nielsen and the cold formalin method in the unautoclaved specimens, both being 48 per cent positive.

In the autoclaved specimens, the cold formalin method gave 56 per cent positive, while the Ziehl-Nielsen gave 42 per cent, or a difference of 4 per cent. It will be noted that between the unautoclaved and the autoclaved specimens by the Ziehl-Nielsen method there is a difference of 4 per cent, while in the same specimens stained by the cold formalin method, there is a difference of only 2 per cent. This difference in positive results between the unautoclaved and autoclaved specimens can be explained in view of the fact that on autoclaving, the sputum coagulates, thus making it difficult to pick up the small white or yellow caseous portions which are so often positive for acid-fast bacilli. Thus, when the sputum is coagulated, unless there is an abundance of acid-fast bacilli, and in many cases there is no such abundance,

the sampling tends to be inaccurate since it is purely a matter of chance.

The centrifuged specimens showed the greatest percentage of positives, 50 per cent, as was to be expected since it is more searching. However, in a large laboratory where numerous sputa are examined daily this method is not feasible from the standpoint of time and amount of material required. It is felt that an ordinary smear in routine cases is sufficient. However, should repeated examination on different samples be negative, it is suggested that a concentration by centrifugalization be done.

It was found that on staining the smears eight minutes in carbol fuchsin, as suggested by Moss, the organisms took a deep red color. This staining time was cut down and it was found that a much more satisfactory stain was obtained if the smear was stained for only three to four minutes in the cold carbol fuchsin, thus giving a light red against a dark blue background. This short time did not readily affect their decolorization. In fact, smears were left in acid alcohol overnight and read the next morning. On examination the organisms were found to retain the dye. Evidently the formalin, through a physico-chemical reaction, sensitized the cells in such a manner that they accepted the dye readily and resisted decolorization.

With the above results the following procedure is given for staining smears with the cold formalin method for examination of acid-fast bacilli:

1. Prepare smear in usual manner.
2. Cold formalin—commercial grade (40 per cent), eight minutes.
3. Rinse in water.
4. Cold carbol fuchsin, three to four minutes.
5. Rinse in water.
6. Decolorize in acid-alcohol, one minute (maximum—overnight).
7. Counterstain with methylene blue, 30 seconds.

SUMMARY

1. Duplicate results were obtained by using Moss' cold carbol fuchsin method in

comparison with the Ziehl-Nielsen method.

2. Much time is saved by the use of the Moss cold carbol fuchsin method, since it does not require steaming the slide.

3. Objectively better smears were obtained by using a shorter staining time.

BIBLIOGRAPHY

1. Moss, E. S.: Improved method for staining of tubercle bacillus and other acid-fast organisms, U. S. Vet. Bur. M. Bull., 4:247, 198.

DISMENORRHEA*

B. BERNARD WEINSTEIN, M. D.†
NEW ORLEANS

The occurrence of pelvic pain just before or during menstruation has been discussed for centuries, and it is still an important problem in gynecology. Though we have recently acquired considerable new information regarding its cause and treatment, much confusion of ideas and experimentation in therapy is prevalent. This is particularly illustrated in the field of endocrine therapy, where many reports of extremely promising results have failed to stand the test of time and critical evaluation. This paper will consider some aspects of the problem of management of primary dysmenorrhea, about which there is at present a need for further clarification and critical evaluation.

TYPES OF DISMENORRHEA

In considering dysmenorrhea one should first recognize that the patients are usually assignable to two distinct groups. The first group includes those who have secondary or extrinsic dysmenorrhea. Patients with secondary dysmenorrhea have demonstrable pelvic pathology responsible for the painful menstrual periods. The most frequent causes of secondary dysmenorrhea are: pelvic inflammatory disease, fibroids, endometriosis, stricture of the cervix, adenomyoma, and to a lesser degree, displacement of the uterus. The cause of dysmenorrhea in a

patient of this group having been ascertained, the therapy is obvious, and the results of therapy are good. The second group is composed of patients having primary, idiopathic, or intrinsic dysmenorrhea. In these patients we cannot demonstrate organic pelvic pathology to which the painful menstruation may be attributed. The cause of primary dysmenorrhea is unknown, although the theories of causation are numerous; the management varies widely and the results of the same types of therapy differ in various reports. It is this type of dysmenorrhea which is found usually in young women, who may or may not be married, and who have normal pelvic organs. Their menstrual pain may be mild or of such severity that the patient comes to dread the approach of the menstrual period. The pain may begin a day or two, or three, before the menstrual period and extend through the first day or two of flow. Patients frequently have to remain in bed for a day or more each period, and may be forced to resort to mild or marked sedation. It is the management of this group of patients that will be particularly considered.

INCIDENCE OF DISMENORRHEA

There are wide discrepancies in the incidence of dysmenorrhea as reported by various writers. The discrepancies arise from differences in the manner of obtaining information, the care with which primary and secondary types were differentiated, and the interpretation of the subjective symptom "pain." Bell and Parsons reported that 12 per cent of 840 University women had severe menstrual pain. Cunningham studied a group of 14,268 University women, reporting a dysmenorrhea incidence of 50 per cent. Emge found that 2.8 per cent of 4,500 patients had dysmenorrhea, while Lakeman found that 89.6 per cent of a group of 365 industrial workers reported painful menstrual periods. Pullen and Hamblen recently summarized the reported incidence of dysmenorrhea in the literature and concluded that "possibly 50 per cent or less of healthy women experience dysmenorrhea of a varying degree, and that possibly 1-5 per cent are forced to retire during par-

*Presented at the Post-Graduate Week in Obstetrics and Gynecology, April 24, 1943.

†From the Departments of Gynecology and Gross Anatomy, School of Medicine, Tulane University.

ticularly severe bouts of menstrual pain." Regardless of the exact incidence, dysmenorrhea, and particularly primary dysmenorrhea, is an all too common gynecologic condition, and to the patient who comes to the physician demanding relief it is a very real and important disability.

CAUSES

That the etiology of primary dysmenorrhea is still unknown is clearly attested by the voluminous literature on its theoretical causes. Among the important causal factors considered are: (1) Uterine hypoplasia; (2) psychogenic factors; (3) neurogenic factors; (4) endocrinopathies; (5) alteration in uterine motility; (6) alteration in endometrial fragmentation; (7) alteration in carbohydrate metabolism; (8) obstructions of cervical canal; (9) extragenital factors including allergic states.

TREATMENT

Recently the endocrine causes of dysmenorrhea have received considerable attention, and the literature has been flooded with conflicting accounts of the use of various endocrine substances in the management of primary dysmenorrhea. Pullen and Hamblen have recently discussed these at some length, listing the following classifications of endocrine causes.

I. Dysmenorrhea related to altered estrogen metabolism:

- (a) Estrogenic deficiency
- (b) Excess of estrogen
- (c) Estrogen unbalance

II. Dysmenorrhea related to altered progestin metabolism:

- (a) Progestin deficiency
- (b) Excess of progestin
- (c) Inadequate progestin metabolism

III. Dysmenorrhea related to altered androgen metabolism:

- (a) Androgen deficiency
- (b) Excess of androgen

IV. Dysmenorrhea related secondarily to thyroid diseases.

V. Dysmenorrhea related secondarily to altered carbohydrate metabolism.

I am in full agreement with Novak, who states "certain newer studies make it seem probable that dysmenorrhea is much more

frequently due to endocrine dysfunction than we believed only a few years ago." However, a mere glance at the list of endocrine causes reveals at once the complexity of the problem of endocrine therapy in the individual case of dysmenorrhea, and at once explains the conflicting results obtained. A finger of caution, and warning, should be pointed at the indiscriminate use of hormone therapy. In dysmenorrhea, as in all other endocrine dysfunctions, hormone therapy should be utilized only after careful study of the patient and therapy must of necessity be individualized.

A more complete discussion of the various theories of causation of dysmenorrhea can be found in any of the more recent texts on gynecology and need not be treated here.

Treatment should be instituted only after a thorough history and physical examination have been done. In obese or malnourished patients, correction of these conditions will cure the dysmenorrhea in many instances. The presence of anemia, tuberculosis, nephritis and other systemic disorders or diseases must be ruled out, and treated. Not infrequently change in environment or corrective exercises for the sedentary worker will correct her menstrual complaint. Simple antispasmodics (tinct. belladonna: 10 gtts. tid) and mild sedatives (phenobarbital, gr. $\frac{1}{2}$, tid) used for two to three days before and during the first two days of the period will help. The psychogenic factor is quite important, and psychotherapy is frequently of value. Then, too, we must agree with the old statement that in some cases at least "dysmenorrhea is the protest of the disappointed uterus" and pregnancy may bring an end to the patient's lament. Pregnancy does not cure nearly so many cases of dysmenorrhea as once supposed, and should be advised with caution and due reservation as to the benefits to be derived therefrom. It is often embarrassing to have a patient assured of a "pregnancy cure" return with severe dysmenorrhea and reasonably demand that we explain its recurrence.

When we have exhausted the possible benefits to be obtained from the simpler

measures of diet, exercise, change in environment, simple sedation and antispasmodics we may consider the use of endocrine therapy.

By far the most valuable hormone in the treatment of dysmenorrhea is thyroid. Thyroid should be used far more liberally than in the past. To be effective it should be used to clinical tolerance, to a large extent ignoring the basal metabolic rate. While it is advisable to have a preliminary basal metabolic rate and subsequent ones to check the effect of medication, clinical signs of overdosage are more valuable and should be closely observed. Thyroid should be given in dosages of $\frac{1}{4}$ to $\frac{1}{2}$ gr. three times a day and increased or decreased as indicated.

Where simpler measures plus thyroid are not efficacious, the other hormones may be tried.

Estrogenic hormone gives the best results when administered to women who have dysmenorrhea associated with uterine hypoplasia. The hormone is given in cyclic fashion in the first half of the cycle. Estrogen is given two to three times weekly in doses of 25,000-50,000 i. u. for the first two weeks of the cycle. It may be administered orally in equivalent dosage for the first two weeks of the cycle. We usually use .5 mg. stilbestrol once or twice daily. In those patients who cannot tolerate stilbestrol we use biologic estrogens in equivalent amounts. A reasonably large number of patients with hypoplasia of the uterus and dysmenorrhea respond to this therapy.

Estrogens may also be used in women with normal uteri to suppress ovulation by inhibition of the pituitary. In this type of patient estrogen is also given in cyclic fashion. Caution should be used here against the prolonged use of the hormone because of the possible damage to the ovary. Therapy should never be continued for longer than three months without interruption.

Corpus luteum hormone is of value in other cases. It is given both because of its relaxing effect on the myometrium, and

to restore the normal estrogen-progestin metabolism. It is usually used in women with normal uteri, and is given in the last portion of the cycle. It may be given intramuscularly in dosages of 1-2 mg. daily for the last three to eight days of the cycle, or in equivalent amounts (approximately 5 times the intramuscular dose) orally for the same period. A gratifying large percent of selected cases will respond to this therapy. It may also be used in the second half of the cycle when cyclic sterol therapy is used to "splint" the ovary. Estrogen (.5 mg. stilbestrol, or its equivalent in biologic hormones) is given for the first half of the cycle; corpus luteum hormone 1-2 mg. daily is given in the second half of the cycle. Using this therapy an artificial (anovular) period is produced which is pain free. This may be done for two or three months and should then be interrupted. In many women, especially when there is a large psychic factor present, the freedom from pain experienced during these cycles seems to break the dread with which they anticipate their periods and may be followed by many months of normal, pain-free cycles. Prolonged use of cyclic sterol therapy will damage the ovaries and its use is therefore limited.

The procedure of D & C and of D & C and stem pessary is time-honored and still quite useful. It should be used when other measures including diet, exercise, sedation, antispasmodics and endocrine therapy (excluding androgens) have failed after adequate trial. Women are frequently relieved of dysmenorrhea for several months by a simple D & C and not uncommonly may be relieved for much longer periods of time.

Patients who definitely have primary dysmenorrhea which is refractory to all other types of therapy, adequately administered for a long enough period of time, may be given male sex hormone therapy. I am rather wary of testosterone therapy and use it only in preference to sympathectomy which remains as therapy of last resort. Prior to using sympathectomy all other forms of medical and endocrine therapy

and the simple surgical procedure of D & C and stem pessary should be tried. Testosterone is given orally in dosages of 10 mg. twice weekly throughout the cycle or in the last half of the cycle and may be increased or decreased in subsequent cycles. The total dosage in a month should not exceed 200 mg. The total dosage should not exceed 600 mg. before a period of rest is given. The patient must be warned of possible virilistic changes (voice, hirsutism) which may occur, and one should constantly observe the patient while under treatment, watching for the development of these signs. In a carefully selected, closely supervised, small group of patients this therapy has worked very well.

When all the foregoing methods have been exhausted, a matter of final resort in a very selected group of patients is superior hypogastric sympathectomy. The procedure is not unduly difficult from the technical viewpoint and is always successful, if the patient is properly selected and adequate resection of the sympathetic plexus is done. The chief criticism of this procedure is that it cures dysmenorrhea by removing the pain pathways and does not in any sense correct the underlying pathology. I am in accord with those who point out that a gynecologist who can report a large series of superior hypogastric sympathectomies probably has not adequately studied his patients or given them full benefit of other forms of therapy. When used, however the resection of the nerve plexus must be adequate if good results are to be obtained. The removal of the superior hypogastric plexus does not interfere with the normal physiology of menstruation or pregnancy.

Finally, in the management of primary dysmenorrhea, one may use the following outline of therapy:

1. Adequate history and physical—rule out secondary dysmenorrhea.
2. Regulation of diet, exercise, environment. Correction of obesity, malnutrition, anemia and so on.
3. Simple sedation, antispasmodics, and psychotherapy.

4. Thyroid.
5. Thyroid plus cyclic estrogenic therapy.
6. Thyroid plus cyclic progestin therapy.
7. Thyroid plus cyclic sterol therapy.
8. D & C.
9. D & C and stem pessary.
10. Androgenic therapy.
11. Superior hypogastric sympathectomy.

CONCLUSION

Dysmenorrhea cases are divided into primary and secondary types. The secondary group has demonstrable pelvic pathology to which we can attribute the menstrual pain; the common causes are stricture of the cervix, endometriosis, pelvic inflammatory disease, fibroids and displacement of the uterus. The management of secondary dysmenorrhea is usually a correction of the underlying pathologic cause.

The specific cause or causes of primary dysmenorrhea have not as yet been clearly defined. Each patient should be carefully studied, and the therapy individualized. While endocrine therapy is valuable and the results good in well selected cases, the indiscriminate and haphazard use of hormones in the treatment of dysmenorrhea, as well as other endocrine dysfunctions, is to be deplored. The use of medical and endocrine methods of therapy should be exhausted, and the simpler surgical procedure of D & C and D & C and stem pessary used prior to the employment, as a matter of last resort, of superior hypogastric sympathectomy.

THE MALE SEX HORMONE

ITS USE AND ABUSE*

CAPT. LEONARD B. SHPINER, M. C.
CAMP LIVINGSTON, LA.

The purpose of this paper is to present a review of the scientific substratum upon which our present day concepts of the male sex hormone rest. There is no pretense of an exhaustive survey of the problem, for the magnitude of task is beyond the scope of this limited paper.

*Presented before the Rapides Parish Medical Society, May 3, 1943, at the Station Hospital, Camp Livingston, Louisiana.

EMBRYOLOGY

The male gonads or testes are paired compound organs which arise from the genital ridge of the Wolffian body. Differentiation between ovary and testes occurs about the sixth or seventh week of embryonic life. In man the testes descend at the third month from their origin at the level of the second lumbar vertebra to the iliac fossa, and at the sixth or seventh month to the abdominal inguinal ring. Extending from the bottom of the fetal testis is a fibrous band (gubernaculum) which serves as a guide for testicular descent into the scrotum. This occurs in the last month of intra-uterine life. The scrotum may be considered as an evagination of the wall, and the placement of the testes in the scrotum insures proper temperature for spermatogenesis.

HISTOLOGY

In addition to the seminiferous tubules, there are present slender pillar-like elements, arranged perpendicular to the basement membrane, to which they are attached. These are designated as "sustentacular" or Sertoli cells. The exact function of these cells is not clear, some believe that they aid in the metabolism of spermatozoa. Scattered in the loose connective tissue are clumps of irregular shaped polyhedral cells, known as the interstitial cells of Leydig. Each nuclei contains chromatin granules and one or two nucleoli. Immediately adjacent to the nucleus is a large attraction sphere surrounded by golgi apparatus. The peripheral cytoplasm contains numerous mitochondria. In fresh condition the cytoplasm contains refractile granules which react positively to tests for neutral fats and lipoids. The most interesting inclusion bodies are rod-shaped crystalloids with rounded ends. The interstitial cells are abundant at birth, decrease in numbers subsequently and reappear in full activity at puberty. It is these cells which are commonly believed to be the elements that produce the male sex hormones.

HISTORICAL SURVEY

To the interested student of this subject, a chronologic review of this phase of en-

docrinology together with an excellent appended bibliography is presented by Newerla.¹

The testis was the first organ suspected of, and associated with internal secretion, as well as the first gland subjected to animal experimentation. The ancients noted the effects of castration upon animals, and upon eunuchs who were part of the social order.

Some of the contributors lending lustre to this interesting phase of endocrinology were: Aretaeus the Cappadocean,² 150 A. D., who in his chapter on gonorrhea stated, "for it is the semen, when possessed of vitality which makes us to be men, hot, well braced in limb, well voiced, spirited, strong to think and to act. For when the semen is not possessed of its vitality, persons become shrivelled, have a sharp tone of voice, lose their beard, and become effeminate as the characteristics of eunuchs prove." John Hunter³ in 1762 attempted to ascertain whether the genital organs of one sex could be grafted to and grown in the body of the opposite sex. He transplanted the testicles of a cock into the abdomen of a hen. Some grafts took root, but he considered the experiments as incomplete, and of no value. However, he failed to mention masculinization effects observed with a few successful transplants. In 1848 Berthold of Gottingen⁴ transplanted the gonads into castrated roosters, presenting the typical effects of castration. This was the first experimental demonstration of hormonal action of any type. His clear demonstration of the productive influence of the testicle, that is, its effect on the blood, and through the blood upon the organism generally, was published in a five page monograph which remains the only noteworthy epitaph of an author who wrote voluminously on other subjects.

In 1889 Brown-Sequard⁵ published his famous paper on self-rejuvenation (beneficial influence on general health, muscle power, and improved mental activity) after autotherapy with testicular extracts prepared from dogs' testes. The unfortunate part of Brown-Sequard's work was the un-

scientific manner of investigation and the heralded claim of rejuvenation. With the possible exception of the search of Ponce de Leon, the ageless quest for perpetual youth was never brought so attractively before the attention of the world. Much of his so-called therapy was useless, and unproved by competent contemporaries, or successors of Brown-Sequard. The inevitable result was that strong prejudice for and against a mode of therapy was built not on controlled observations and experimentation, but rather on wishful conclusions, inactive preparations and useless grafting operations.

McGee,⁶ in 1926, working in Koch's laboratory (University of Chicago), was the first to prepare a lipid extract from fresh bull's testis—0.01 mgm. of which would restore the atrophic comb of a capon.

In 1930 Butenandt⁷ of Danzig, succeeded in isolating in crystalline form 15 mgm. of two chemically pure substances (androsterone and dehydroandrosterone) from 15,000 liters of male urine. He found that these products were sterols, and that they were closely related to the female hormone, estrone.

In 1935 David,⁸ working in Laquer's laboratory in Amsterdam, isolated testosterone from bull's testis, just before Ruzika's⁹ laboratory synthesized it from cholesterol. This substance proved to be more potent than the androsterone of Butenandt.

The male hormones are derivatives and gradations of sterols, and are related to those found in bile acids, adrenal cortex, cardiac glucosides, some vitamins and carcinogens. Androgenic substances have been isolated from urine, feces and adrenal glands.

BIOCHEMISTRY

The term "androgen" is used to describe any substance having masculinizing properties, and which promotes the growth of accessory organs of reproduction in the castrated male mammal. The androgen secreted by the testes is known as "testosterone."

Very little is known about the metabolism of the male sex hormone. The urine of

normal men contains androsterone and dehydroandrosterone in rather large quantities as compared with the low titers found in the tissues. Although these substances have been isolated from the urine, their mode of formation, that is, whether they are formed from testosterone or other precursors, is not known. Part of the hormone in the body fluid (i. e. urine) is free, while part is combined as a glucuronide. The former fraction (free) is soluble in benzene, while the latter is not. The activity of testosterone is enhanced when combined with a fatty acid, as is the case with testosterone propionate.

Variation in the daily excretion of androgenic substances in a given individual is very considerable, and must be assayed over a period of time. The average for a normal male is 66 international units per day.¹⁰ The international unit is defined as the androgenic activity which is produced by 0.1 mgm. (100 micrograms or gammas) of androsterone.

Estrogenic substances are also secreted by the male. Their excretion may vary, but the normal average is 100 international units or the equivalent of 10 gammas of theelin per day.¹⁰ The international unit of estrogenic activity is defined as 0.1 gamma (0.1 microgram) of a standard preparation of estrone. Various other units have been used to express estrogenic activity. The mouse unit corresponds approximately to one international unit, the rat unit to about three international units.

Recent studies indicate there is little or no estrogenic activity in the urine of male or female children before 10-11 years of age.^{11, 12} For boys beyond this age the daily excretion varies between 10-60 international units per day of estrogens, for girls the excretion varied between 10-80 international units per day.

Excretion of androgens occurs in both male and female children. The excretion is proportional to age, but more recent work¹³ indicates such proportions hold better for physical age and development, than merely the age in years.

The excretion of androgens appears to be at a maximum during the period between 20-40 years of age.¹⁴ Beyond this period there is a definite decrease.

PHYSIOLOGY

The combined efforts of clinicians and laboratory workers have yielded the following fundamental physiologic data. The testis has a two-fold function: (1) to produce an abundance of healthy spermatozoa (exocrine); (2) the production of male sex hormone from the interstitial cells (endocrine). Testicular hormone is produced only in vertebrates, and its influence is exerted upon the accessory organs of reproduction. The extent of the interrelationship between the exocrine and endocrine structures of the testis is not yet clearly defined. The production of the male sex hormone in the normal adolescent male results in the development of secondary sex characteristics; namely, changes in the pitch of voice, growth of the penis, scrotum, prostate, seminal vesicles, epididymis, vas deferens, body hair, beard, skeletal growth, and masculine patterns of aggressiveness, vigor and self-confidence. These striking effects can be duplicated by administration of the hormone to patients with testicular deficiency.

A delicate balance exists between the anterior lobe of the pituitary and the gonads.¹⁵ Thus the production of testicular hormone depends on the presence of the gonad stimulating hormone of the pituitary, and like the secretion of other peripheral glands, testosterone appears to exert a specific inhibitory action on the pituitary gland.¹⁶ The administration of large doses of testosterone to women inhibits follicle formation, ovulation, and the formation of the corpus luteum in the ovary, probably through its effect on the pituitary.¹⁷

The role of testosterone in body metabolism has been demonstrated thus: Under its influence, the basal metabolic rate in hypogonadal patients was observed to be elevated.^{18, 19} Likewise, the lowering of the respiratory quotient suggested a greater oxidation of fats.²⁰ The androgens are chemically similar to the hormones of the

adrenal cortex, thus exhibiting the metabolic effects of adrenal cortical hormones. The electrolyte metabolism is affected, and the administration of testosterone causes the retention of extracellular electrolytes and fluids. In addition, the excretion of nitrogen, phosphorus and potassium is diminished, indicating a retention of the essential cellular as well as the extracellular constituents.²¹ The locus of action is probably in the renal tubules.²² Also of interest is the observation that the injection of testosterone into experimental animals causes a marked enlargement of the kidneys and renders the organ less susceptible to toxic agents.²³

Further clinical data show that testosterone plays an important part in the growth of muscle and bone of patients with testicular deficiency.^{24, 25} Dermavascular improvement,²⁶ as well as an increase in the red blood cells and hemoglobin, has been reported in eunuchoid men under testosterone therapy.²⁷ It has been suggested that testicular secretion in relationship to the androgen-estrogen ratio, may play a part in the acne vulgaris of adolescent boys,²⁸ and may be a factor in the development of common baldness.²⁹

ORGANOTHERAPY

Though the androgenic preparations have been used in therapeutics for such a short time, they have found application in a large variety of clinical disease entities. For purposes of appraisal, diseases subjected to testosterone therapy have been divided into three classes.

1. *Diseases peculiar to males:* In this group one finds the most physiologic and rational indications for testosterone therapy, and as a result one finds the most encouraging reports of definite benefit derived from this form of medication in all types of testicular failure.³⁰ Infantile genitalia enlarge, (except for the testes) erections and ejaculations occur, the growth of masculine hair is stimulated, and eventually a beard may develop. Increase in virility is reflected in changes in body contour, enlargement of the larynx with deepening of the voice, and changes in the skin and mus-

culature. Either as a direct result of hormone therapy, or indirectly by encouraging changes, the emotional status improves, there is increased confidence and aggressiveness, and a greater emotional stability.

Since testosterone stimulates only secondary sex changes with no effect on the development of the testicle or spermatozoa, treatment of delayed puberty without a chance for onset of normal testicular function is considered unwise.³¹

There is some clinical evidence that androgens may prove of limited value in the treatment of cryptorchidism. Some favorable results have been reported in this condition with testosterone and some of the gonadotropins.³² This form of therapy should be considered, and probably deserves a trial before resorting to surgical intervention.

Controversial reports in the literature on the use of testosterone³³ in benign hypertrophy of the prostate have been recorded. However, there is little evidence that the administration of androgens can cause involution of an existing hypertrophy, and there is always the possibility that the male sex hormones may cause a still greater enlargement of the gland. There may be some indication that nocturia, dribbling, and control of the urinary stream may be benefited by androgen medication, but the effect may be secondary to a generalized improvement in muscle tone or other changes rather than to a specific action on the prostate.³⁴ The use of this hormone may be of value in early cases and in poor operative risks.

The treatment of male sterility,³⁵ and functional impotence,³⁶ has proved on the whole discouraging. This form of therapy should not be used for disorders of sperm formation, since it actually suppresses spermatogenesis.

Striking improvement following the use of the male sex hormone in the so-called male climacteric has been reported with complete alleviation of psychosomatic symptoms and the return to a normal psychologic state.³⁷

2. *Therapy in gynecologic conditions:* Androgen therapy has not been limited to diseases of males, for in a wide variety of gynecologic disorders, purported useful clinical application has been found for the male hormone. These are mastodynia,³⁸ post-partum engorgement of the breasts,³⁹ inhibition of lactation,⁴⁰ functional uterine bleeding,⁴¹ dysmenorrhea,⁴² treatment of uterine fibroids,⁴³ premenstrual tension,³⁹ afterpains,³⁹ pelvic inflammatory disease,⁴⁴ endometritis,⁴⁵ nocturia from various causes,⁴⁶ and nymphomania.⁴⁷ In the menopause,⁴⁸ treatment with testosterone has yielded more encouraging results than that with estrogens. The rationale for the use of this hormone in the treatment of menopausal symptoms is its expeditiousness in suppressing ovulation without endometrial stimulation.

3. *General diseases:* As with all new drugs the radical trend of testosterone therapy is its use in a variety of disease entities without a sound physiopathologic basis for such use. The widespread systematic effects noted in the treatment of hypogonadal states with the male sex hormone suggests the possibility that it may influence systems other than the urogenital tract.

Testosterone alone or combined with gonadotropins has been used and recommended in cases of retarded growth⁴⁹ where it increases growth rate and bone development.⁵⁰ Conversely, it has been reported to be useful in arresting abnormally rapid growth.⁵¹

Testosterone has been used in the treatment of various psychoses with some success, as in cases of agitated depression,⁵² atypical involutional psychoses,⁵³ male involutional psychoses,⁵⁴ and sexual psychopathy (homosexuality).⁵⁵ One patient with the diagnosis of schizophrenia associated with hypogonadism was treated with favorable results.⁵⁶ In some manner behavior problems in adolescence associated with hypogonadism⁵⁷ tend to disappear after physical superiority has been improved with testosterone. However, better controlled studies, larger series of cases, and longer

periods of observation are necessary before venturing to appraise this aspect of testosterone therapy.

Various dermatitides⁵⁸ including senile pruritis,⁵⁹ associated with senescence in males have responded to androgen therapy after other treatment had failed.

Androgen therapy has been tried in disorders of the vascular system with a modicum of success, as in essential hypertension, peripheral vascular disease, and in angina pectoris.⁶⁰

Two patients with myotonia atrophica associated with testicular atrophy responded markedly to testosterone treatment, whereas a patient with no testicular involvement yielded no such gratifying results.

DISCUSSION

In order to obtain the optimum effects of therapy, and accurate diagnosis, use of the following criteria in evaluating hypogonadism is postulated: (1) The examination of the genital system; (2) the presence or absence of endocrine stigmata, such as abnormal voice, abnormal hair distribution, and abnormal fat distribution; (3) x-ray epiphyseal age; (4) anthropometric measurements; (5) the metabolism rate; (6) the assay of the androgen-estrogen ratio; (7) the blood, sodium and potassium values, and (8) an estimation of dietary deficiency due to different vitamin intake or metabolism.

In the present rampant enthusiasm for the administration of hormones in endocrine as well as non-endocrine disease, the endocrinologist must eliminate certain age-old empiricisms, before drawing any unbiased conclusions as to the effect of a specific therapy on a given individual. (1) In the majority of human ills there is a tendency to improve and the administration of any medicine will be followed by improvement. (2) Suggestive therapy, whether used deliberately or indirectly, is an important factor in therapeutics, and in the field of endocrinology, it is no less important. The arbitrary guides to treatment of an endocrinopathy are an established diagnosis, control of psychic factors, indications for substitution or stimulative therapy, acquaintance with the advantages

and limitations of hormone therapy, a knowledge of the potency and dosage of hormones, subject to individualism and the possibility of anti-hormone effects. These principles should be adhered to in order to obtain the maximum benefits of endocrine therapy.

Some have warned against the use of testosterone therapy in growing persons on the ground that it may cause premature epiphyseal union and consequent dwarfing.⁶² Administration of androgens to males with normal testicles may be harmful, decreasing the number of spermatozoa and ejaculating volume.⁶³ In the treatment of male involutional psychosis, untoward psychosomatic effects such as headaches, weakness, nausea, vomiting, vertigo, abdominal cramps, increased restlessness, diminished potency, masturbation, and agitation were noted.⁶⁴ Gynecomastia has been occasionally observed in males during a course of testosterone therapy, but this effect is transient and disappears after this hormone is discontinued.⁶⁵

Females receiving androgen therapy in the menopause may develop the following untoward effects: hirsutism, deepening of the voice, and hypertrophy of the clitoris. The change in voice remains, though these other effects may regress if treatment is stopped. Acne,⁶⁷ weight gain and increased libido⁶⁸ are occasional and transitory effects in women. Increased libido may be marked in castrated women.⁶⁹

In reiteration, the indications for the use of the male sex hormone are for substitution therapy in hypogonadism, (in which the testes are absent or cannot respond to stimulation as in cases of eunuchism), most cases of eunuchoidism, impotence due to testicular deficiency, and the male climacteric. It has a limited field of application in delayed puberty, cryptorchidism, behavior problems of adolescence associated with hypogonadism, benign hypertrophy of the prostate, nymphomania, menopause, and psychoses associated with testicular deficiency. Androgenic therapy is contraindicated in sterility, azoöspemia, arteriosclerotic or hypertensive disease, in old men

in impotence not caused by testicular degeneration, and in hypogonadism in which the testes can respond to stimulation.

Again it must be emphasized that the indiscriminate use of this hormone may be attended by untoward symptoms and undesired clinical effects, which may not be reversible, even should treatment be stopped.

CONCLUSION

The work on the male sex hormone commands a huge literature, but the concepts are still indefinite and more study is needed in order to reconcile the large number of disconnected facts and theories with its fundamental precepts. Knowledge of the merits and limitations of this form of therapy, and caution concerning overly optimistic reports should be exercised before adopting the male sex hormone as a part of one's therapeutic armamentarium.

REFERENCES

1. Newerla, Gerhard J.: The history of the discovery and isolation of the male hormone, *New England J. M.*, 288:39, 1943.
2. Aretaeus: The Extant Works of Aretaeus, the Cappodocian. On Gonorrhea. Translated by F. Adams. 510 pp. London: Sydenham Society, 1854. P. 346.
3. Hunter, J.: A Treatise on the Blood, Inflammation, and Gunshot Wounds, London, Nicol, 1794. p. 224.
4. Berthold, A. A.: Transplantation der Hoden, *Arch. F. Anat., Physiol., u. wissensch. Med.*, p. 42, 1849.
5. Brown-Sequard, E.: Experience démontrant la puissance dynamogénique chez l'homme d'un liquide extrait de testicules d'animaux, *Arch. de Physiol.*, 1:651, 1889.
6. McGee, L. C.: Biological Activity of Testicular Extracts: A Doctor's Dissertation, Chicago, University of Chicago Press, 1927.
7. Butenandt, A.: Über die Chemische Untersuchung der Sexualhormone, *Ztschr. f. ang. Chem.*, 44:905, 1931.
8. David K., Dingemans E., Freud, J., and Laqueur, E.: Über krystallinisches männliches hormon aus hoden (Testosteron wirksamer als aus Horn oder aus Cholesterin bereitetes Androsteron, *Ztschr. f. Physiol. Chem.*, 233:281, 1935.
9. Ruzicka, L., and Wettstein, A.: Kuenstliche Herstellung des maennlichen Sexualhormons Trans-dehydroandrosterone und des Androsten 3-17 dions, *Helvet. chim acta.*, 18:986, 1935.
10. Gallagher, T. F., Peterson, D. H., Dortman, R. I., Keyon, A. T., and Koch, F. C.: Daily urinary excretion of estrogenic and androgenic substances by normal men and women, *J. Clin. Invest.*, 16:695, 1937.
11. Dortman, R. I., Creelich, W. W., and Solomon, C. I.: The excretion of androgenic and estrogenic substances in the urine of children, *Endocrinol.*, 21:741, 1937.
12. Oesting, R. B., and Webster, B.: Sex hormone excretion of children, *Endocrinol.*, 22:307, 1938.
13. Nathanson, I. T., Towne, L. E., and Aub., J. C.: The daily excretion of urinary androgens in normal children, *Endocrinol.*, 24:335, 1939.
14. Kochakian, C. D.: Excretion of male hormones, *Endocrinol.*, 21:60, 1937.
15. Moore, C. R., and Price, D.: Gonad hormone functions and reciprocal influence between gonads and hypophysis with its bearing on the problem of sex hormone antagonism, *Am. J. Anat.*, 50:13, 1932.
16. Laqueur, G. L., and Fluhman, C. F.: Action of testosterone on female rat hypophysis, *Endocrinol.*, 31:300, 1942.
17. Geist, S. H., Gaines, J. A., and Salmon, U. J.: Inhibitory action of testosterone on human ovary, *Proc. Soc. Exper. Biol. & Med.*, 44:319, 1940.
18. McCullagh, E. P., and Rossmiller, H. R.: Methyl testosterone calorigenic activity, *J. Clin. Endocrinol.*, 1:503, 1941.
19. McCullagh, E. P., and Lewis, I. A.: Carbohydrate metabolism of patients treated with methyl testosterone; hypogonadism, *J. Clin. Endocrinol.*, 2:507, 1942.
20. Jones, R., McCullagh, E. P., McCullagh, D. R., and Buckaloo, G. W.: Methyl testosterone, observation on hypermetabolism induced by methyl testosterone, *J. Clin. Endocrinol.*, 1:656, 1941.
21. Kenyon, A. T., Knowlton, K., Sandiford, I., Koch, F. C., and Lotwin, C. A.: Comparative study of the metabolic effects of testosterone therapy in normal men and women, and in eunuchoidism, *Endocrinol.*, 26:36, 1940.
22. Selye, H.: The effect of testosterone on the kidney, *J. Urol.*, 42:637, 1939.
23. Seyle, H.: On the protective action of testosterone against kidney damaging effect of sublimate, *J. Pharmacol. & Exp. Therap.*, 68:454, 1940.
24. Kearns, W. M.: Methyl testosterone administered orally to patients with marked testicular deficiency, *J. Clin. Endocrinol.*, 1:126, 1941.
25. Simonson, E., Kearns, W. M., and Enzer, N.: Effect of oral administration of methyl testosterone on fatigue in eunuchoids and castrates, *Endocrinol.*, 28:506, 1941.
26. Reynolds, S. R. M., Hamilton, J. B., DiPalma, J. R., Hubert, G. R., and Foster, F. I.: Dermovascular action of certain steroids in castrate, eunuchoid and normal men, *J. Clin. Endocrinol.*, 2:228, 1942.
27. McCullagh, E. P., and Jones, R.: Effect of androgens on blood count of men, *J. Clin. Endocrinol.*, 2:243, 1942.
28. Hamilton, J. B.: Male hormone substance prime factor in acne, *J. Clin. Endocrinol.*, 1:570, 1941.
29. Hamilton, J.: Male hormone stimulation as a prerequisite and an excitant in common baldness, *Am. J. Anat.*, 71:451, 1942.
30. Pullen, R. L., Wilson, J. A., Hamblen, E. C. C., and Cuyler, W. K.: Clinical reviews in andrologic endocrinology. II. Treatment of androgenic failure, *J. Clin. Endocrinol.*, 2:655, 1942.
31. Jaffe, I., and Brockway, G.: Use of male sex hormone in endocrine disturbances in children, androgenic and genital development, *J. Clin. Endocrinol.*, 2:189, 1942.
32. Zelson, C., and Steinitz, E.: Treatment of cryptorchidism with chorionic gonadotropic hormone and male sex hormone, *J. Pediat.*, 17:315, 1940.
33. Heckel, N. J.: Influence of testosterone propionate upon benign prostatic hypertrophy and spermatogenesis: clinical and pathological study in humans, *J. Urol.*, 43:286, 1940.
34. Hamilton, J. B., and Gilbert, J.: New conception of etiologic factors in the production of symptoms observed in benign prostatic hypertrophy: mechanism of control by male hormone substance, *Tr. Western Br. Soc. Urol. Assn.*, p. 144, 1938.
35. Heckel, N. J., and Steinitz, C. R.: Effect of testosterone therapy upon seminal fluid in man, *J. Urol.*, 4:118, 1941.
36. Carmichael, H. T., and Noonan, W. J.: Effects of testosterone propionate in impotence, *Am. J. Psychiat.*, 97:919, 1941.
37. Boswell, C. H.: Male climacteric, *Illinois M. J.*, 82:280, 1942.
38. Nathanson, I. T., Meigs, J. V., and Parsons, L.: Treatment of mammary pain and secretion with testosterone propionate, *New England J. M.*, 226:323, 1942.
39. Berling, M.: Oral administration of methyl testosterone in gynecology, *J. Clin. Endocrinol.*, 1:986, 1941.
40. Reilly, J. S., and Solomon, S.: Inhibition of lactation postpartum with testosterone propionate, *Endocrinol.*, 26:236, 1940.

41. Kuzrock, R.: Functional uterine bleeding, *J. Clin. Endocrinol.*, 1:199, 1941.
42. Abarbanel, A. R.: Percutaneous administration of testosterone propionate for dysmenorrhea, *Endocrinol.*, 26:765, 1940.
43. Perloff, W. H.: Influence of testosterone propionate on size of uterine fibroids in human female, *J. Clin. Endocrinol.*, 2:419, 1942.
44. Stone, E. T. R.: Use of testosterone in management of pelvic inflammatory disease, *Am. J. Obst. & Gynec.*, 42:114, 1941.
45. Wilson, L.: Action of testosterone propionate in case of endometriosis, *Endocrinol.*, 27:29, 1944.
46. Greenblatt, R. B.: Syndrome of nocturnal frequency alleviated by testosterone propionate, *J. Clin. Endocrinol.*, 2:231, 1942.
47. Rubenstein, H. S., Shapiro, H. D., and Freeman, W.: Treatment of morbid sex craving with aid of testosterone propionate, *Am. J. Psychiat.*, 97:703, 1940.
48. Joel, C. A.: Clinical results obtained with sublingual administration of methyl testosterone: menopausal therapy, *J. Clin. Endocrinol.*, 2:16, 1942.
49. McCullagh, E. P., and Rossmiller, H. A.: Methyl testosterone: effect on body weight and growth, *J. Clin. Endocrinol.*, 1:507, 1941.
50. Finkler, R. S., Furst, N. J., and Cohn, G. M.: Present status of use of male sex hormone and chorionic gonadotropins as growth stimulating factors, *J. Clin. Endocrinol.*, 2:603, 1942.
51. Carrier, F. P., Frantz, C. H., and Vandermeer, R.: Reduction in growth rate in gigantism treated with testosterone propionate, *J. A. M. A.*, 117:515, 1941.
52. Danziger, L., and Blank, H. R.: Androgen therapy of agitated depression in males, *Med. Ann. District of Columbia*, 11:181, 1942.
53. Rotherich, N. D., Postle, B., and Foltz, L. M.: Altered effect of therapy in involutional melancholia with estrogen and androgen, *Arch. Neurol. & Psychiat.*, 45:752, 1941.
54. Pardoll, D. H., and Bellinson, L.: Effect of testosterone propionate in male involutional psychotics, *J. Clin. Endocrinol.*, 1:138, 1941.
55. Myerson, A., and Neustadt, R.: Bisexuality and male homosexuality: their biologic and medical aspects, *Clinics*, 1:932, 1944.
56. Sutherland, G. F., and Hoskins, R. G.: Case of schizophrenia in hypogonadal man, *J. Clin. Endocrinol.*, 2:647, 1942.
57. Rubenstein, H. S.: Combined use of testosterone propionate and psychotherapy in treatment of hypogonadal behavior problem boys, *J. Clin. Endocrinol.*, 2:519, 1942.
58. Hollander, L., and Vogel, G. R.: Testosterone propionate in treatment of male post-climacteric dermatoses, *Arch. Dermat. & Syph.*, 46:112, 1942.
59. Feldman, S., Pollock, J., and Abarbanel, A. R.: Treatment of senile pruritis with androgens and estrogens, *Arch. Dermat. & Syph.*, 46:112, 1942.
60. Walker, T. C.: Use of testosterone propionate and estrogenic substance in treatment of essential hypertension, angina pectoris and peripheral vascular disease, *J. Clin. Endocrinol.*, 2:560, 1942.
61. Gesser, F. H., Langworthy, O. R., and Vest, S. A.: Muscle strength in myotonia atrophica (dystrophia myotonia) improved by testosterone propionate, *Endocrinol.*, 26:241, 1940.
62. Moore, C. R.: Physiology of testes, *J. A. M. A.*, 116:1638, 1941.
63. McCullagh, E. P., and McGurl, F. J.: Effects of testosterone propionate on epiphyseal closure, sodium and chloride balance and on sperm counts, *Endocrinol.*, 26:377, 1940.
64. Davidoff, E., and Goodstone, C. L.: Use of testosterone propionate in treatment of involutional psychosis in the male, *Arch. Neurol. & Psychiat.*, 48:11, 1942.
65. McCullagh, E. P., and Rossmiller, H. R.: Methyl testosterone androgenic effects and production of gynecomastia and oligospermia, *J. Clin. Endocrinol.*, 1:496, 1941.
66. Greenhill, J. P.: Recent advance in gynecologic endocrinology, *Illinois M. J.*, 79:61, 1941.
67. Greenhill, J. P., and Freed, S. C.: Further studies on androgen therapy of gynecologic disorders, *Am. J. Obst. & Gynec.*, 39:636, 1940.
68. Geist, S. H.: Androgen therapy in human female, *J. Clin. Endocrinol.*, 1:154, 1941.
69. Wollner, A.: Estrogen testosterone and growth hormone in production of a typical epithelial growths in human cervical mucosa, *J. Clin. Endocrinol.*, 1:228, 1941.

—0—

LOUISIANA STATEWIDE SEROLOGIC EVALUATION SURVEY, 1942-1943

IRA LEO SCHAMBERG, M. D.†
BALTIMORE, MD.

Maintenance of high standards of laboratory performance is essential if the laboratory is to be of the maximum value to the physician in the diagnosis and control of disease. The establishment of training and experience requirements for laboratory directors and technicians has been effective in raising the level of laboratory performance in recent years, and despite the temporary difficulties introduced by increased wartime demand for such personnel, this improvement will in all likelihood continue.

The calibre of the performance of sero-diagnostic tests for syphilis has, however, been found to vary to a great extent even in laboratories manned by well-trained and well qualified staffs and laboratory directors often find it difficult to determine how accurate are the results of their serologic tests. Inter-laboratory checks, through submission of a part of specimen to a neighboring laboratory, are sometimes made. However, if the results in the two laboratories are contradictory, it is usually not possible to determine which report is correct. Correlation of the laboratory report with the clinical findings is seldom of help in evaluating the performance of the test, inasmuch as at the present time the majority of patients first diagnosed as having syphilis are in the latent stage and corollary anamnestic, epidemiologic or clinical evidence of the disease is often not found.

The serologic evaluation survey has long been recognized as the best method of determining the reliability of serologic tests as

†Former Director of Section of Venereal Disease Control, Louisiana State Board of Health.

performed in different laboratories. The early surveys were concerned with evaluation of the various modifications of the complement fixation and flocculation technics in the laboratories of their originators, and have provided excellent data on the sensitivity and specificity of these tests in the hands of the author serologists. It was found, however, that such surveys do not reflect the results obtained in actual practice. Technicians performing the same tests in different laboratories often obtain widely varying results. Another type of survey, therefore, was introduced in 1935 in which diagnostic laboratories were given the opportunity to check their technics on a carefully selected group of blood specimens against reliable control laboratories. Such studies at first evaluated only State Health Department laboratories, but in recent years intra-state evaluations of all laboratories desiring to participate have been carried out in a number of States. This last type of survey brings evaluation of serologic tests down to the level at which it is of value to the practicing physician and enables him to learn the reliability of the laboratory to which he submits his serologic specimens.

In response to requests from laboratory directors throughout the State, the Louisiana State Board of Health, in August, 1942, instituted the first serologic evaluation survey ever conducted in Louisiana. Dr. Reuben L. Kahn, Dr. Benjamin S. Kline, Dr. John A. Kolmer and Dr. William A. Hinton, authors of the tests bearing their names, agreed to serve as control laboratories. In addition, the Venereal Disease Research Laboratory of the U. S. Public Health Service at Stapleton, Staten Island, and the Johns Hopkins Hospital in Baltimore were used as controls. All laboratories in the State were invited to participate. All laboratories operating under the Department of Institutions and the State Board of Health and, in addition, all of the laboratories in military hospitals in the State expressed a desire to enter the survey. The response from private hospitals and laboratories was also gratifying.

For the private hospitals and laboratories participating, the survey was maintained completely confidential, through the use of code numbers. At the inauguration of the survey, numbered slips were made out and sealed by a clerk into small envelopes. These envelopes were then shuffled and one inserted into a larger envelope addressed to the director of each participating private laboratory. The reports of the results of tests in these laboratories were identified only by code number, so that even the author does not know the results obtained by the various private laboratories. All other laboratories reported by name. Each laboratory was asked to perform the test or tests which it used in its routine diagnostic work, and was provided with report forms and self-addressed envelopes, together with a letter of instructions.

Each Monday from five to eighteen identical serologic specimens were sent to each laboratory. These were approximately equally divided between specimens from non-syphilitic donors and from syphilitic patients under treatment or observation in the Isolation Hospital Venereal Disease Clinic in New Orleans. Most of the former were medical students from the Tulane or Louisiana State University Schools of Medicine and were paid \$5.00 for the blood letting. To expedite the collection of the 5 c. c. blood samples, wooden racks provided with four rows of thirteen holes each were employed. In preparation for the blood letting, sterilized test tubes labeled with adhesive plaster bearing the same specimen number were inserted in these racks. The donor was placed in a recumbent position on an examining table and a 16 gauge needle, to which was attached a three-way stopcock was inserted without local anesthesia into an antecubital vein. The blood flowed from a short length of rubber tubing attached to the sidearm of the stopcock directly into the test tubes. In most cases the needed 250 c. c. of blood was obtained in three to five minutes. If the blood did not flow freely, it was aspirated by a 0 c. c. syringe attached to the central arm of the stopcock. One physician and one nurse

formed the blood letting team. After being allowed to stand at room temperature for approximately 20 minutes, the test tubes were refrigerated in the icebox for one to two hours before mailing. Cylindrical cardboard mailing tubes with metal bottom and screw top were employed to mail specimens. These were just large enough to permit the packing of not more than nine test tubes with cotton padding. Hemolysis of blood specimens was at first found to be a problem but thorough refrigeration and accelerated routing of the specimens practically eliminated this problem after the first four to five weeks.

Three hundred blood specimens, 150 from syphilitic patients and 150 from normal non-syphilitic individuals, were submitted to the six control laboratories and to the participating State laboratories from August, 1942, until March, 1943.

All laboratory directors were requested to report their findings as positive, doubt-

ful or negative. When results were reported as 1, 2, 3 or 4 plus, these were translated to positive, doubtful or negative, in accord with the instructions of the author serologists.

After each block of 75 specimens was examined, a detailed tabulation was made of the results reported by each laboratory on each specimen, together with a brief clinical summary of the status of the donor. Separate tables were made for the syphilitic and non-syphilitic donors, and a copy sent to each participating laboratory together with a summary of the reports to date. Table I presents a portion of one of these tabulations.

At the completion of the survey, the performance of tests on the blood specimens submitted was evaluated in accordance with the standards set by the Committee on Evaluation of Serodiagnostic Tests for Syphilis. Sensitivity, which applies only to reports from syphilitic donors, is computed

TABLE I
PORTION OF DETAILED REPORT SUBMITTED AT INTERVALS TO PARTICIPATING LABORATORIES
LOUISIANA STATE-WIDE SEROLOGIC EVALUATION SURVEY
LOUISIANA STATE BOARD OF HEALTH 1942-1943
SERA FROM KNOWN CASES OF SYPHILIS

Patient Data					
Age	20	38	50	25	26
Sex	F	M	M	F	M
Color	W	C	C	C	C
Admission Diagnosis (1)	S*	EL	LL	CG	LL
Duration of Syphilitic Infection (2)	2m	9m	35	25	26
Number Arsenical Treatments	8	20	0	50	6
Number Heavy Metal Treatments	3	6	10	65	13

(1) S=secondary; EL=early latent; LL=late latent; CG=congenital; (2) Years unless specified; m=months; *=darkfield positive for *T. pallidum*.

Blood Specimen Number	226	228	230	231	233
Control Laboratories	Test				
Dr. Wm. A. Hinton	Hinton	+	+	+	+
Johns Hopkins Hosp.	Eagle Floc.	+	+	+	±
Dr. John A. Kolmer	Kolmer	+	+	+	+
	Kahn	+	+	+	—
	Kline	+	+	+	—
	FINAL	+	+	+	±
Dr. Reuben Kahn	Kahn Stand.	+	+	+	—
	Kahn Pres.	+	+	+	+
Dr. B. S. Kline	Kline Diag.	+	+	+	—
	Kline Excl.	+	+	+	+
	Control Excl.	+	+	+	+
	FINAL	+	+	+	±

TABLE II

THE SENSITIVITY AND SPECIFICITY OF SEROLOGIC TESTS FOR SYPHILIS EVALUATED IN THE
LOUISIANA STATEWIDE SEROLOGIC EVALUATION SURVEY
TESTS WITH SPECIFICITY 99% OR ABOVE, IN ORDER OF SENSITIVITY

Laboratory Name or Code Number	Test	SENSITIVITY (percent) Sera from Non- Syphilitic Individuals	SPECIFICITY (percent) Sera from Known Cases of Syphilis
State Board of Health—New Orleans	Kolmer	90.2	99.7
#22	Kolmer	89.1	99.3
Control Laboratory—Dr. Reuben Kahn	Kahn Pres.	88.1	99.3
State Board of Health—Jennings	Kolmer	88.0	99.3
State Board of Health—Monroe	Kolmer	87.1	99.3
#25	Kahn	87.0	100.0
#25	Kolmer	86.9	100.0
Marine Hospital—New Orleans	Kolmer	86.7	100.0
Control Lab.—Dr. J. A. Mahoney, V. D. Res. Lab.	Kolmer	86.1	100.0
State Board of Health—Franklin	Kolmer	85.7	100.0
Camp Livingston	Kolmer	85.7	99.3
Control Laboratory—Dr. J. A. Kolmer	Kline	85.5	100.0
#26	Kline	85.5	99.7
Control Laboratory—Dr. J. A. Kolmer	Kolmer	85.2	100.0
#24	Laughlin	85.0	100.0
State Board of Health—New Orleans	Kahn	84.3	100.0
State Board of Health—Shreveport	Kolmer	82.6	100.0
Charity Hospital—New Orleans	Kline	78.5	99.7
Control Laboratory—Dr. B. S. Kline	Kline Diag.	77.7	100.0
Charity Hospital—New Orleans	Kolmer	77.4	100.0
State Board of Health—Alexandria	Kolmer	76.8	100.0
State Board of Health—Shreveport	Kahn	76.5	100.0
State Board of Health—Monroe	Kahn	76.4	99.0
#26	Kahn	75.7	99.7
#19	Kline	74.3	100.0
#34	Hinton	73.9	100.0
Charity Hospital—Shreveport	Kolmer	73.6	99.3
Charity Hospital—Pineville	Kolmer	73.6	100.0
Camp Livingston	Kahn	73.5	99.0
State Board of Health—Alexandria	Kahn	73.4	99.3
Control Laboratory—Dr. R. Kahn	Kahn Stan.	73.4	100.0
Control Lab.—Dr. J. A. Mahoney, V. D. Res. Lab.	Kahn	72.9	100.0
#19	Kahn	72.8	99.6
#11	Kahn	72.7	99.5
Lagarde Hospital—New Orleans	Kahn	72.1	99.6
Charity Hospital—Pineville	Kahn	71.2	100.0
Lagarde Hospital—New Orleans	Kolmer	71.2	99.6
#75	Kolmer .2	71.1	99.3
Flint-Goodridge Hospital—New Orleans	Kahn	70.9	100.0
#75	Kolmer .1	70.9	99.3
#34	Kline	70.4	100.0
LEVEL OF ACCEPTABLE SENSITIVITY			
Camp Claiborne	Kolmer	67.6	99.3
#16	Kahn	65.7	100.0
Marine Hospital—New Orleans	Kahn	63.1	100.0
Camp Claiborne	Kahn	62.2	100.0
#75	Kahn	62.1	99.3
Port of Embarkation—New Orleans	Kahn	61.9	100.0
Control Lab.—Dr. J. A. Kolmer	Kahn	59.8	100.0
#19	Kolmer	59.2	100.0
Camp Polk	Kahn	57.1	100.0
#13	Kolmer	55.2	99.6

by adding the percentage of positive reports to one-half the percentage of doubtful reports, and is considered satisfactory if within ten per cent of the sensitivity of the control laboratories. Specificity, which applies only to reports from non-syphilitic donors, and is computed by adding the percentage of negative reports to one-half the percentage of doubtful reports, must be 99 per cent or over to be considered acceptable. Evaluation was carried out only on the tests which were performed on 100 or more specimens from syphilitic patients and on 100 or more specimens from normal donors, since ratings based on a smaller number of examinations were not considered trust-

worthy. Anticomplementary reactions were not included in the tabulations.

Of the 49 laboratories in the State which participated in the survey, 12 did not examine a sufficient number of specimens to permit evaluation. These 12 laboratories either entered the survey late or were forced to withdraw before its completion.

Tables II and III present the sensitivity of tests performed on a number of specimens in the 37 test laboratories and six control laboratories completing the survey. Table II presents those tests with a specificity of 99 per cent or above, in descending order of sensitivity, Table III those with specificity of less than 99 per cent, in de-

TABLE III
THE SENSITIVITY AND SPECIFICITY OF SEROLOGIC TESTS FOR SYPHILIS EVALUATED IN THE
LOUISIANA STATEWIDE SEROLOGIC EVALUATION SURVEY
TESTS WITH SPECIFICITY LESS THAN 99%. IN ORDER OF SPECIFICITY

Laboratory Name or Code Number	Test	SENSITIVITY (percent) Sera from Known Cases of Syphilis	SPECIFICITY (percent) Sera from Non- Syphilitic Individuals
Control Lab.—Dr. W. A. Hinton	Hinton	84.3	98.9
#1	Kahn	80.5	98.8
Contr. Lab.—Dr. J. A. Mahoney, V. D. Res. Lab.	Eagle Floc.	85.7	98.7
#14	Kolmer	87.9	98.6
Harding Field	Kahn	67.0	98.5
#15	Kolmer	73.0	98.4
State Board of Health—Franklin	Kahn	81.3	98.3
Control Lab.—Dr. B. S. Kline	Kline Excl.	92.0	98.3
Control Lab.—Dr. J. A. Mahoney, V. D. Res. Lab.	Mazzini	93.4	97.9
#22	Johns	84.4	97.9
#11	Kolmer	79.2	97.7
Charity Hospital—Lafayette	Kahn	75.0	97.9
Control Lab.—Johns Hopkins Hospital	Eagle Floc.	87.5	97.9
State Board of Health—Jennings	Kahn	77.8	97.6
Charity Hospital—Shreveport	Kahn	75.0	97.4
#20	Kahn	88.2	96.9
#14	Kline	81.4	96.9
#75	Hinton	74.8	96.8
#15	Kahn	71.6	96.8
Control Lab.—Dr. B. S. Kline	Kline Control Excl.	95.6	96.5
Flint-Goodridge Hospital—New Orleans	Wassermann	48.6	96.3
Charity Hospital—Lafayette	Johns	75.0	96.1
#13	But. Johns Tube	66.7	96.1
#28	Kolmer	68.7	95.5
Barksdale Field	Kahn	67.4	95.5
#20	Mazzini	88.6	85.2
#17	Kline	67.4	95.0
Charity Hospital—Shreveport	Kline	81.4	94.9
#28	Kahn	74.7	94.6
#27	But. Slide	48.6	93.2
Charity Hospital—Monroe	Kahn	73.7	89.7
#13	But. Johns Slide	80.0	89.6
Charity Hospital—Monroe	Kline	70.2	88.0

scending order of specificity. Calculation of the mean sensitivity of the control laboratories was necessary in order to determine the level of acceptable sensitivity in the test laboratories in accord with the recommendations of the Committee on Evaluation of Serodiagnostic Tests for Syphilis. The mean sensitivity of the control laboratory technics, excluding supersensitive tests, which achieved a specificity of 99 per cent or over was found to be 77.7 per cent and therefore acceptable sensitivity in this survey was set at 67.7 per cent. The Kline diagnostic and Hinton tests in the Venereal Disease Research Laboratory were performed on a few less than the 100 syphilitic and 100 non-syphilitic specimens required and therefore do not appear in Tables II or III. However, these tests were included in calculating the mean control sensitivity. The horizontal line in Table II delineates the level of acceptable sensitivity.

Table IV indicates that just under half of the 71 tests evaluated were found ac-

were received for a continuation of evaluation procedures. Therefore, beginning in April, 1943, a less intensive continuing survey was established in which each participating laboratory receives nine serologic specimens during the first week of each month. A number of laboratories which did not participate in the original survey are taking part in the continuing phase and in June, 1943, 47 test laboratories received blood specimens. The six control laboratories have graciously expressed their willingness to continue to serve in the present survey. It is planned to carry on the continuing phase of the survey as long as a desire for this is indicated.

APPROVAL OF LABORATORIES

Certificates of approval for the performance of serologic tests for syphilis have been granted in a number of States on the basis of results obtained in evaluation surveys. Such approval grants merited recognition to those laboratories performing acceptable tests and in addition provides for

TABLE IV
ACCEPTABLE TESTS BY TYPE OF LABORATORY

Type of Laboratory	No. of Participating Laboratories	Laboratories With 1 Or More Acceptable Tests Number	Percent	Number of Tests Evaluated	Acceptable Tests Number	Tests Percent
State Board of Health	6	6	100	12	10	83
Charity Hospitals	5	5	60	11	5	45
Private Hosps. & Labs.	18	9	50	36	14	39
Military Hospitals	8	3	38	12	5	42
Totals	37	21	57	71	34	48

ceptable, whereas more than a half of the 37 test laboratories had one or more acceptable tests.

Of interest is comparison of the sensitivity of the diagnostic tests with acceptable specificity (Table II), with those with lower specificity (Table III). The mean sensitivity of the former is 75.3 per cent, of the latter 76.1 per cent. Virtual exclusion of false positive results, in the tests listed in Table II, is seen not to interfere with the attainment of a high level of sensitivity.

CONTINUATION OF SURVEY

Considerable interest was expressed by the Directors of the laboratories participating in this survey and a number of requests

the practicing physician a knowledge of the reliability of the tests performed in the laboratory which he uses. It is therefore planned that certificates of approval shall be granted by the State Board of Health for those tests found acceptable in the laboratories throughout the State. The private laboratories will be requested to reveal their confidential code numbers so that approval may be granted to those with acceptable tests.

SUMMARY AND CONCLUSION

(1.) The first statewide serologic evaluation survey in the State of Louisiana was carried out from August, 1942, until March,

1943. Three hundred blood specimens were submitted to each participating laboratory.

(2) Thirty-seven laboratories performing 71 technics examined 100 or more specimens from syphilitic patients and 100 or more specimens from normal donors.

(3) Just under one-half of the tests performed were found acceptable by the standards set by the Committee on Evaluation of Serodiagnostic Tests for Syphilis.

(4) A continuing survey on a less intensive scale will be carried on indefinitely as a result of the interest expressed by the laboratory directors.

(5) Plans are underway for granting of certificates of approval for acceptable tests.

I am indebted to Dr. George M. Leiby, former Director of the Division of Preventive Medicine, for initiation of the survey; Dr. Owen F. Agee, Venereal Disease Control Officer, New Orleans, for drawing of the serologic specimens, and to Dr. George H. Hauser, Director of the Division of Laboratories, for advice and suggestions in the course of the survey.

CHAILLÉ ORATION*

JOHN A. BACON
NEW ORLEANS

Mr. Chairman, Members of the Orleans Parish Medical Society, and Guests:

In opening, may I say that I am deeply appreciative of the honor conferred upon me as one of those selected to speak on this "Stanford Chaillé Memorial Night." I am fully aware that I can in no way improve upon what has been said before by such able speakers as Dr. Ernest Lewis, Dr. Rudolph Matas, and others equally prominent, so I shall concentrate, more or less, upon another side of Dr. Chaillé's life, and tell a few of the many humorous incidents that occurred during my long association with him. Although to know him was to admire and revere him, there were many times when I was moved to laughter by his quick and ready wit.

It was on October 15, 1895, that I first met Dr. Chaillé, when I reported to him, as Dean of the Tulane Medical School, for

duty. I had been given a position made vacant by the death of my predecessor. Among other things, I was advised by the Dean that my position would be of brief duration, six months only; that, positively, no loafers would be tolerated; and, finally, that he expected me to know unfailingly every professor, demonstrator, and instructor, as well as all medical students. Incidentally, there were about four hundred such students enrolled in the school at that time. I was then turned over to Mr. Belfield, better known to all students as "Oswald," who was to instruct me in my manifold duties. I immediately discovered that Oswald was a man of very few words, as he so clearly demonstrated on this occasion. His explanations were, to say the least, extremely brief. To sum up, these were my instructions from Mr. Belfield: "This is your office." That was all. No more, no less. The rest was up to me.

Dr. Chaillé deeply impressed me by his thoroughness to detail, by his brevity of speech (I often wondered if this was contagious and Mr. Belfield had contracted it), by his punctuality in all appointments, and by the manner in which he, by his own actions, always set the example for hard work for others to follow. Luckily for me, it was in the month of June, 1896, just when my position was about to terminate, that Dr. Chaillé reached the decision that the library should be made ready for student use by classifying, cataloging, and indexing all books therein. This necessitated further use of my services and thus I was assured of permanent employment. I may add here that Dr. Chaillé personally donated a large number of books to the library, as present records will readily show. The library at that time was not equipped with the modern conveniences available today; there were long wall-shelves full of books to which access was had only by ladder; and, although then 66 years of age, Dr. Chaillé daily would climb this ladder to classify books for cataloging and indexing. One day, in classifying the books, he came across one entitled: "Disease and Infirmities of Old Age." There was a mo-

*Delivered before the Orleans Parish Medical Society, December 16, 1943.

ment's pause as he silently glanced at the title as if in deep study. Then, with a rueful smirk, he remarked: "I don't know a damned thing about them, and I don't want to."

As an example of his thoroughness, I may cite the following incident: Dr. Alderman, who was then President of the University of North Carolina, had been invited by Dr. Chaillé to make the commencement address at the Medical School graduation exercises. This was the same gentleman who later became President of Tulane University, and subsequently of the University of Virginia. He was to be met at the station and escorted to the school by Alfred, the porter, a description of whom had been sent to Dr. Alderman by Dr. Chaillé. The latter's remarkable attention to detail was forcibly brought out, when, upon alighting from the train, Dr. Alderman spotted Alfred immediately and without the least difficulty. Walking up to the porter and tapping him on the shoulder, Dr. Alderman jokingly exclaimed: "So thorough was the description of you given by Dr. Chaillé, that I could have located you in the darkest recesses of Africa."

Dr. Chaillé was a man ever ready and willing to listen to what others had to say, and always open to conviction. This attitude of his is well brought out by the following case. Once he sent for the building contractor, a Confederate veteran by the name of Martin Costley, and gave him a pencilled sketch for some alterations and repairs to be made on Dr. Chaillé's home. Mr. Costley was to report back the probable cost of this work. The following day, however, the contractor returned with a plan of his own, which he claimed would give better results and cost less money than the one submitted by the doctor. Without any argument whatever, Dr. Chaillé's reply to the contractor was: "Go ahead and do it your way; it's only a fool who would listen to me."

During Dr. Chaillé's tenure as Dean, there were but three holidays in the Medical School, Christmas, New Year's Day, and Mardi Gras. Nevertheless, the major-

ity of the students would go home for the Christmas holidays, even though school continued on. On New Year's eve, when Dr. Chaillé entered the lecture room to deliver his usual discourse on gross pathology, he was greeted with a tremendous ovation by the approximately twenty students who had faithfully remained at school. Their idea, of course, was that this tumultuous reception would get them excused from the lecture-room; but they were sadly disappointed. They had reckoned without their instructor. When complete silence finally ensued, he simply and quietly remarked to them: "There is an old saying that when you have plenty of fun one day, you have very little the next. Judging from your enthusiasm, I am almost certain that the majority of you will be going up and down Canal Street tonight, tooting horns and wearing monkey hats. Now, all who want to leave this room, may do so; but I am going to hold this autopsy, and satisfy myself, at least, of what this man died."

I have stated previously that Dr. Chaillé was very punctual in his appointments. This applied in equal measure to business appointments, faculty meetings and lecture hours. Woe be to anyone who failed to keep an appointment with him, or who was not at a given place at the time specified. I believe Dr. Matas can readily testify to the truth of that statement.

I am sure all those who attended Medical School remember the special chair. Whenever a student applied for registration, he had to sit on a certain chair close by Dr. Chaillé's desk. This chair had a special arm upon which were to be placed all papers so that the sanctity of the Dean's desk would not be disturbed. Dreadful, indeed, was the fate of anyone who attempted to move that chair from its special position in the room. As soon as the student took his seat, the inquisition began. Sometimes it was exceedingly brief. The first question fired at the applicant as he seated himself was: "Have you the money?" A negative reply meant the immediate termination of the interview. For further information concerning these conferences, I sup-

pose former students would be a better source of knowledge.

Along with pathology, Dr. Chaillé also occupied the chair of hygiene in the Medical School. One of his pet questions in this branch of medical science was: "How would you build a sanitary privy?" One can well imagine the many amusing answers received. I happened to be monitor on the day when a certain student asked whether the doctor wanted a city or country privy built. Up the stairs I went and repeated to the doctor what the student wanted to know. Immediately came his reply: "Tell him to build both, but don't under any circumstances, build them so elaborate."

In his weekly quiz, the doctor always expected a direct reply to a direct question. Special emphasis was placed upon this fact as all students soon discovered. Whenever a silly answer was given, Dr. Chaillé would counter with this time-honored remark of his: "Don't think like a fool; and for God's sake, don't tell anyone Dr. Chaillé taught you such nonsense." It always produced results.

His straight-from-the-shoulder remarks at first contact always had a very sobering effect. For instance, in his opening address to the Freshman class, he would invariably say: "Some old-maid aunt said that you looked like a doctor, and that's why many of you are here; but always remember this—looks will never get you a diploma; it can only be acquired by hard work and constant study." The majority of them took his advice and acted accordingly.

In conclusion, I may truthfully say that his unflagging interest in the Medical School he loved so well, remained as great as ever when he was about to be retired; and he immediately began looking around for a suitable and worthy successor. The result of his endeavors was the appointment of Dr. Isadore Dyer, who so ably carried on where Dr. Chaillé left off.

Dr. Chaillé died May 27, 1911, and I felt as if I had lost a personal friend; for there is no doubt in my mind that whatever success I have attained in this world may well be attributed to my long contact with one

who was a great man, a tireless worker, an able physician, an extraordinary lecturer, and finally above all, an ideal moulder of human character—Dr. Stanford Emerson Chaillé.

THE LIMITATIONS OF MEDICAL EDUCATION IN WAR TIME*

J. H. MUSSE, M. D.
NEW ORLEANS

Education during war has undergone a profound, almost catastrophic upheaval. The training of the average student in the sciences and in the arts has come to an abrupt close with the introduction of draft regulations requiring the drafting of boys past the age of 18. This is the age when most young men are entering college. It is true that in the South they may enter somewhat earlier in their life but the average throughout the country is slightly under 18. In an effort to give a student a smattering of education, high schools and preparatory schools are accelerating and weakening their courses. A few younger men may have a year or two of work in college before they are selected for one or another of the special training courses of the United States Army or Navy or before they actually enter the service. If a man is selected for special training definite courses must be taken with virtually no election whatsoever, or at the best to a very limited extent. This means almost the complete abolition of eclectism. No man can be considered to have a rounded education unless he has the vision, the knowledge, and the training to appreciate that there are other points of view from that which he has been taught, that there are other diagnostic technics than those which he has learned or others may be right and still not agree with his personal views.

Now with the continuation of the war, training will adhere to one fixed road. There will be no deviation or detouring from the main concrete highway to the gravel side roads where knowledge may be obtained in

*Annual Alpha Omega Alpha address, Stars and Bars Chapter, Tulane University, December 17, 1943.

these byways which permit a man to be called educated. The student who is preparing himself for the study of medicine is obligated to take a certain number of scientific courses, the humanities and the arts must almost be neglected and at best this student will receive a minimum of such knowledge. The cultured physician is a person who has read some of the old masters; he knows something of the history of this and other nations; he has at least a reading knowledge of one or another foreign language. It is trite to remark that the cultured physician is the man of medicine who obtains a greater satisfaction in life and who usually accomplishes more than he who has adhered closely to medicine or a specialty of medicine and knows but a small part of that which is necessary in order to be educated in the broad sense of the term. He does know one thing, and probably he knows it well but his life at best is not full.

A comment aside—the practice of too highly specialized specialties often makes a man narrow and cramped in his outlook. He can see only his own limited field of a few acres and not the broad miles of diversified medical knowledge.

To return to our theme: The medical student of the future is going to enter the medical school then with only the rudiments of broad preparations; but fortunate indeed is this medical student as contrasted with other students of the professions in that at least his studies and his curricula are to be those of the pre-war student. It may be that a bit more will be presented to him having to do with matters militaristic but on the whole he can feel quite satisfied and happy that there has been no interference with his fundamental training for his future professional life. When you graduate, however, from the medical school, you and future war time students are going to suffer from an inadequate, incomplete and unsatisfactory intern training. Nine months is entirely too short a time for a person to observe and learn under guidance, even a year is too short a time because the average intern who serves a two year internship will get very much more out of his second year

in the hospital than he will in the first year. Furthermore, under present war time conditions, staffs of hospitals are woefully depleted. The visiting men who man these hospitals are kept busy with the exigencies of the practice of medicine, often taking care of their own practice to the exclusion of their hospital duties. They have but little time to instruct, guide or lead the intern. However, the picture is not quite as blue as it is just painted. There are some bright and rosy spots on the canvas. An intern gets just about as much out of an internship as he puts into it and if the young medical neophyte will realize that self-education can be accomplished by industry and work, if he will study his cases carefully, if he will make use of library facilities and if he will work industriously at all times, even the so-called poorest internship will yield him definite and satisfactory results.

I have no quarrel with Procurement and Assignment but I am deeply and sincerely disappointed in the action they have taken relative to the restriction of internships in the larger hospitals, most of which have excellent teaching facilities or are primarily teaching institutions. The reasons for restriction of interns in these big institutions has been that many of the smaller hospitals might possibly have to close because of lack of staff, including interns. Procurement and Assignment feel that it is necessary to take care of the civilian population and that such care is best given in hospitals which are adequately manned. A shortage of physicians will obstruct the best medical care in the hospitals that are relatively small and have no university medical school connections. The intern is being called upon to take care of civilians. The fact that the internship is probably a part of the continuing education of the young practitioner-to-be has been forgotten, and this in spite of the fact that the medical advisory committee of Procurement and Assignment is composed almost entirely of teachers. It would seem that they have been over-ruled by their lay superiors because I cannot for a minute conceive of medical educators requiring men to serve internships in institutions that are not qualified to give the very

best instruction. Another unfortunate phase of this matter is that the very men who need most the best training will be the men who are not selected by the best institutions. Preference naturally is given the student who has made a good scholastic record and this student has proved by his industry and intelligence that he is in less need of continuing education than those in the low standing group of students. I wish that it would be possible and feasible, and I say this in spite of the fact that you are Alpha Omega Alpha students and leaders in your class, for hospitals where good training might be obtained, to select their men from the bottom of the list rather than from the top.

POSTWAR TRAINING

The enigma of future postwar graduate training is as yet unsolved. The young physician will come out of the Army or Navy, where he has probably done very little medical practice, anxious and desirous of continuing his education, refreshing his mind and possibly pursuing advanced studies for subsequent qualification by one or another of the specialty boards. There will be a tremendous demand by the returning medical officer for opportunities to re-educate himself and to continue his training. This problem is being discussed and is being given serious thought by educational bodies and by individual educators. The leaders of the armed forces are paying attention to this matter and amongst other things it is being suggested that medical officers be given six months' leave of absence with pay to attend refresher courses in medicine at various universities. As a matter of fact one man distinguished in the field of medical education suggested that after the war all teaching of undergraduates stop for one year and that the activities of the faculty be centered in re-burnishing the brains of the recent graduates. This of course is rather an absurdity.

Many of you are not going to be satisfied with such a six months' refresher course. Many of you will want to go into a specialty, the training for which will require from two to five years' graduate work. Most of this work, as you know, is through the

agency of a residency in teaching hospitals. There will not be nearly enough residencies to meet the demand. The head of one department at Duke University has told me he is prepared to take just twice as many residents as he has in the past but even if this were done universally, the need still could not be met. Furthermore, the same man said that these residencies would not have the value that they had in the past, that they would be only 50 per cent as good as prior to Pearl Harbor. This is an important conception of what a great deal of graduate training for a time after the war will be. Maybe they will not be 50 per cent as good but at least in somewhat lower percentage figures and not comparable to those of the immediate past. I wish that I might be able to promise you all that you would have the opportunity of obtaining residencies in the future but I fear that I honestly cannot make such a statement. Your incomplete education is one of the penalties that you will have to pay for the activities of Hitler and the German war machine. In the period of reconstruction you will not be the only ones to suffer, as a matter of fact you as medical men will be much better off than will be the men in other scientific, economic or educational fields. At least you will have a profession back of you and a partial education, whereas in most of the other professions there is no opportunity available to master them.

In terminating my few remarks relative to your medical education and the education of the future medical student in the arts and sciences, let me take the opportunity to say that it is you, the leaders in your class and the leaders in classes elsewhere, the men and women of Alpha Omega Alpha, who must carry the torch of learning and of high standards in medical practice. You are a picked and selected group and it is on your shoulders that will fall responsibilities which will be demanding and which will require your unselfish devotion to your profession. Always if you do your best no more can or will be expected of you. Do try always to give the best that is in you and at all times, and remember that the master word is work.

NEW ORLEANS

Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

C. C. deGravelles, M. D., Ex officio

For one year: Lucien A. LeDoux, M. D., Chairman

H. W. Kostmayer, M. D., Secretary

For two years: James K. Howles, M. D.

For three years: G. C. Anderson, M. D.,

Vice-Chairman

Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D.....*Editor-in-Chief*

Willard R. Wirth, M. D.....*Editor*

Daniel J. Murphy, M. D.....*Associate Editor*

COLLABORATORS—COUNCILORS

Edwin L. Zander, M. D.

J. T. O'Ferrall, M. D.

Guy R. Jones, M. D.

T. B. Tooke, Sr., M. D.

George Wright, M. D.

Rhett McMahon, M. D.

C. A. Martin, M. D.

W. F. Couvillion, M. D.

Paul T. Talbot, M. D.....*General Manager*
1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

THE NURSING SITUATION

In this time of stress, worry and generally upset conditions one is surprised if not shocked to know that the nursing profession is unwilling to accommodate itself to meet war-time situations and perplexities. It seems almost unbelievable that the nursing profession does not understand the difficulties this country is undergoing and which will become more and more critical. There is an acute shortage of nurses and yet these women are unwilling to do extra time even with additional pay. It is in-

comprehensible. Medical men are not working eight hours a day, their days are more likely to be sixteen to twenty hours. They are not refusing to take patients because they work only on an eight-hour basis but doing what they can for the sick and suffering.

When the nursing profession refuses to work extra hours it is the only profession in this country that has taken such a stand; even union members are willing to work overtime in order to produce war material and to keep war activities going.

The nursing profession (perhaps a more appropriate appellation would be nursing union) may realize when the post-war problems present themselves and the inevitable depression occurs that they have antagonized the medical profession and the citizenry as a whole. One of the rather remarkable developments in the City of New Orleans at least has been the acceptance by many people of the so-called practical nurse. They have been found willing to work overtime when the necessity arises. After the war nursing positions will be few and perhaps the experience during the depression of a decade ago may recur when, were it not for PWA, many of the nurses in the city would have literally starved. If a so-called nurse is found willing and capable, certainly in private home nursing at least, people would be willing to accept these nurses under conditions of illness which do not require a very highly specialized type of nursing.

POST-WAR MEDICAL TRAINING

The Army and the Navy medical educators and others are very much interested in the problem of post-war medical education. These groups all realize that men who have been in the service for two or more years and who have been on active combat duty will have need of refresher courses or some other form of training which will reburnish the medical mind professionally inactive for a period of many months or years. There is a large group of interns who have completed nine months of internship and who have gone into the

Army. These men definitely will need additional training. Their intern service has been too short adequately to prepare them for the practice of medicine and this group, together with the next group, those men who have had some experience in the hospital as residents, at best can be said to have a most incomplete course of instruction. In all justice to the interns who have had a short service or the resident who has not completed his residency, opportunity should be afforded to permit these men to continue with their basic training. With the accelerated courses and with the increase in the number of medical students it is going to be difficult to find a place for these men to have additional intern training or resident training.

There are still a few states that require twelve months' training as intern before the candidates for licensure are acceptable to the licensure bodies. In the great majority of the states, however, three months' credit has been given for service in the Army. Nevertheless a man who has graduated from a medical school feels that he should have the privilege of practicing in any state in which he elects to settle down and to carry on his profession.

It has been suggested by Dr. Soskin of Michael Reese Hospital as a partial solution of the problem that the men who had an opportunity of having hospital duty on completion of internship should be given residences at the large hospitals, those men who have been on field duty would be appointed as assistant residents. Residents who had not completed their preparation from the point of view of time spent in training should return to their residency so as to qualify themselves for the specialty boards. There should be supplied for residents who have had three years of training, postgraduate courses in medical schools or fellowships in such medical schools.

A marked increase in the residency staff would call for the expenditure of a considerable amount of money by the hospitals concerned. Housing, maintenance, salary for such a large group as it will be necessary to be taken on by those partici-

pating hospitals will bring about a very material increase in cost of maintaining the institutions. It may be that Governmental aid will help solve this problem. Continuation of training men whose college courses have been stopped abruptly and who have the proper academic qualifications definitely will be provided for by the Government. At the present time the plan seems to be to permit of from one to three years of additional collegiate and probably professional training with a small sum being paid to the trainee, plus the money for all his necessary expenses in whatever institution he may elect to enter. It is possible that this will be the solution of training of young medical officers whose training has been inadequate. Governmental aid to the young man himself plus a certain amount of aid to the hospitals and medical schools may be the solution of the problem.

The policy of the Navy in the future seems to be that they will accept no more limited service men. The jobs which these men could fill will be occupied by men who have been wounded in battle or who have been unable to stand the strain of campaigning. In the light of this declaration presumably many of the younger doctors will be given Naval hospital assignments in this country and thereby will have an opportunity of dealing with medical and surgical problems and qualifying themselves for their future professional life.

One of the great Foundations is preparing to subsidize a few men who have shown unusual promise and who have not been able to continue their residences. This Foundation feels that it would be advisable to select these men now so they they may know when they return to civilian life they will have a place provided for them where living expenses will be met and where training can be obtained.

TREATMENT OF ESSENTIAL HYPERTENSION

Physicians, by and large, know that drug therapy for essential hypertension is notoriously unsatisfactory. Innumerable drugs have been recommended for the

treatment of high blood pressure without demonstrable cause and most of them have fallen by the wayside. In spite of this attrition there still remain a very large list of drugs and pharmaceuticals which are supposed to be "hypotensive" and valuable in the treatment of high blood pressure. The number of drugs used in the treatment of hypertension is a definite indication that no one of them is of particular value. If by chance this or that drug was found to be really effective, all the others would disappear like clouds after a storm. If there was a drug that could compare in efficacy to arsenic or bismuth in the treatment of syphilis, that drug would stand out like a beacon but unfortunately such is not the case. The iodides, the nitrites, the bromides, barbiturates, antispasmodic agents, such as atropine and papaverine have all been tested repeatedly and found wanting.

In addition to the studies that have been made in the past by others, Kapernick* has reviewed the subject and in a large group of patients with hypertension under experimental conditions and has studied the effect of various drugs that have been recommended for the treatment of arterial hypertension. These studies were made on a group of patients carefully selected and were free from any disease such as nephritis, coarctation of the aorta, endocrine disturbances or other causes, organic in nature, responsible for elevated blood pressure. Arteriosclerotic and obese patients, however, were included among the studied subjects. The patients were placed on a strict regimen, the details of which will not be recounted here. The drugs employed included theobromine and theobromine preparations combined with other drugs such as phenobarbital, aminophyllin, the barbiturates alone, the nitrites, together with certain proprietary preparations which contain such things as mistletoe, garlic and other unusual pharmaceutical preparations.

*Kapernick, John S.: The blood pressure in essential hypertension; effect of several reputedly hypotensive drugs, *Am. Heart J.*, 26:610, 1943.

The author concluded from his study that the drugs specifically employed by him and others similar to them, when given continuously in ample dosage for a period of 30 days, failed to have any significant hypotensive effect on the blood pressure of patients with hypertension. Kapernick states that the ordering of these drugs is not to be recommended if the sole purpose is to reduce the blood pressure of a hypertensive patient.

It should be pointed out that an essential hypertensive person has often marked lability of the blood pressure which in certain instances might produce pseudo effects which are not true effects. It should be noted, further, that often symptomatic improvement may occur in the individuals who have symptoms apparently as result of their hypertension, but many do not have such symptoms. These may be controlled but the blood pressure remains unreduced. While symptomatic relief may be desirable and it is often easy to obtain, this does not minimize the fact that the mortality rate of this extremely common condition has not been reduced over a period of years. Kapernick rightly maintains that the symptoms associated with hypertension do not measure the factors which contribute to the death of these patients. On the contrary, elevated blood pressure is a most important contributory factor in the relatively early death of patients with hypertension. A Mayo group has found that the duration of life in the patient with essential hypertension which is classified as minimal is only 8.3 years from the time of the first examination and that in individuals with severe hypertension the duration of life after the first examination is but 5.4 months.

Most physicians have found that in the long run in their hypertensive individuals the exhibition of sedatives probably gives a greater degree of comfort and freedom from symptoms than do any of the drugs which are presumed to act on blood pres-

sure and to have a hypotensive effect. Certainly the barbiturates and the bromides cannot be accused of lowering the blood pressure but patients who take one or an-

other type of sedative lead a relatively comfortable life, although their life expectancy is in no way altered by administering these preparations.

ORGANIZATION SECTION

The Executive Committee dedicates this page to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

SOCIALIZED MEDICINE

Since the question of state or socialized medicine has been ill-defined, I think it proper to define it before entering upon a discussion. The director of the Bureau of Medical Economics of the American Medical Association says, "The socialization of medicine, as the term is commonly used, refers to any form of medical service, diagnosis and treatment, provided, conducted, controlled or subsidized by the federal or any state government, with the exception of public health agencies, such as the U. S. Public Health Department, the Army, the Navy, and state institutions for the insane, tubercular, etc."

Everybody is entitled to know why the petitioner has reached the conclusion that it would not be wise to install that form of socialization in medicine in this country. I am glad of the opportunity to explain the reason underlying his decision.

I should like to show the effect state medicine would have on the physician in destroying his independence and initiative on research, on individual illness and public health, on the increase of morbidity and mortality rates, and that such a system would be inefficient, extravagant and wasteful, placing an extra burden on the taxpayer; and that it is only proposed for the benefit of the non-medically trained politician and job-hunter who have no fear of greater cost, increased taxes, political control or corruption.

I contend the effect of socialized medicine would be very detrimental to the individual doctor, for being human he might become content to live on any salary, however

meagre. Under this plan he would not avail himself of necessary research and post-graduate work, allowing medical knowledge to retrograde, bringing back epidemics and suffering. It is well known that at the beginning of the present century American physicians felt they had to go to Europe for latest developments and most effective teaching of medicine. Today the United States is ahead of Europe with all its compulsory sick insurance. There was a greater amount of graduate medical education existing in the United States than in all the countries of Europe prior to the war. It is not felt that doctors would function best when *coerced* or *compelled under any system*.

Research would be discouraged if the time of the doctor is taken up with a great volume of political patients, a fact indicated by such experience in many countries; there would be less inducement for research because of lesser likelihood of advancement from private initiative and greater likelihood for advancement from political favoritism; and advancement in medical knowledge is thereby impeded.

There is no need for the large cumbersome program advocated by our proponents. There is *no need* for a great deal of any medical service today because of the stamping out of diphtheria, smallpox, typhoid and other scourges under the old plan. Disease prevention is neglected under a state system. Comparative death rates of the United States with European countries will show that the incidence of preventable disease is much lower in our country, as is infant mortality.

Socialized medicine would necessitate an unbearable rise in taxes and build a colossal organization of red tape and political corruption. Opponents and advocates of sickness insurance agree that good medical care costs between \$20 and \$30 per person annually. This must be raised by universal sales tax on wage workers, and is the type of tax that bears heaviest on those least able to pay it. A new fund of more than four billion dollars would be required of the taxpayers and added to his present load.

It is estimated that only 3 per cent of the population of the United States would be liable to illness during the year 1944. Many of these illnesses are so mild they would not require the \$30 to treat them; some of them severe enough to multiply this sum many times. However, it can be depended upon that should there be \$4,000,000,000 made available, it would be spent and wasted yearly.

It is evident that this plan is proposed and abetted by non-medically trained political persons and job hunters and that no system of medicine can survive without the active cooperation and encouragement of the medical profession. The practice of medicine has reached great heights of achievement because of the fact it has been unfettered by political control and has made marvelous progress toward conquering disease for the pure love of science and competition that exists among the doctors in finding out new means and methods to handle diseases.

It is an admitted fact that the system of medical care which has been arrived at in the United States is still far from being perfect, yet towers above that of those nations who have fallen into the chasm of state medicine. In the short period of 150 years in the United States, the number of years a man will live has been nearly doubled. The life expectancy of man was thirty-five, now it is sixty-two years.

American medicine gave the United States in the calendar year of 1943 the most favorable record in its 150 years' history. There was the highest general level

of health and the lowest death rate ever known in the United States or for any equal number of people anywhere in the world. Comparison of vital statistics in Germany, England, and Italy readily show this to be true.

State medicine had an interesting origin in Germany and England. In 1883 Bismarck of Germany and in 1911 Lloyd George of Britain promised medical compensation and sick benefits to industrial workers in exchange for their support in the following election. The people didn't ask for it; the medical profession didn't recommend it.

State medicine would be the cure for Old Age Pensions, because with the return of disease, no one would live to be sixty years of age. It would settle the unemployment problem, as no one would reach twenty-one years if smallpox and diphtheria were allowed to run rampant around the nation again.

Other things that the practitioner takes exception to are the creation of a cumbersome red-tape mechanism with intrusion into the picture of an administrative office force supervising the doctor's methods of diagnosis and treatment, and dictating the remedies he uses.

The attempt to centralize in Washington the management of affairs that of right belong to the respective states is to create a system which inevitably destroys our democracy and betrays the fundamental principles of our government. If one constitutional right is abrogated by purchase or political pressure the others are not safe. In health matters this is particularly dangerous for in a very short time politics would have its finger on the wheel and inherent in politics are graft, stupidity, incompetence, intimidation and everywhere the suppression of individual enterprise and medical responsibility associated with a rapidly increasing tax rate. The inevitable rise in taxation must be emphasized for those who resent the present imposts. It is an accepted fact that when the government goes into any particular kind of business that business is operated with less ef-

iciency and less economy than if it is run by private enterprise.

Regimentation of medical men under state control means unmistakably that the science of medicine is to be dragged in the gutter of political robbery at the behest of social theorists and sentimental perverts. Sentimentality has never been successful in preventing politics from making a mess of public affairs. Is it probable that sentimentalists, social theorists or salaried altruists will in any way obstruct contamination of medicine by political grafters even if their attention is arrested by it? "It will be a sad day for society," said President Wilson, "when the sentimentalists are encouraged to suggest all the measures that shall be taken for the benefit of the human race."

Furthermore, when federal and state governments undertake concurrent jurisdiction, the commonwealth practically sur-

renders its prerogatives and lets government dominate and perform those functions that are inherent and statutory to the State. Where the government has assisted, the government eventually controls. Also, when once a bureau is established it grows and expands and demands more and more from taxation. If once established in the practice of medicine it will emasculate efficiency and paralyze progress.

State medicine cannot change human nature though it may alter relationships. Independence in medical practice is as essential to the happiness and prosperity of doctors and to the advance of scientific medicine as independence in citizenship is to the welfare of government, and this priceless independence gained by prodigious expenditure of blood and treasure should, under all circumstances, be sacredly preserved to the people of these United States.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR OF MEETINGS

- March 1, Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.
- March 2, Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
Executive Committee, Baptist Hospital, 8 p. m.
- March 6, The New Orleans Graduate Medical Assembly.
- March 7, Eye, Ear, Nose and Throat Staff, 8 p.m.
The New Orleans Graduate Medical Assembly.
- March 8, Touro Infirmary Staff, 8 p. m.
Women's Auxiliary, Orleans Parish Medical Society, Orleans Club, 3 p. m.
The New Orleans Graduate Medical Assembly.
- March 9, Joint meeting, Orleans Parish Medical Society with The New Orleans Graduate Medical Assembly, 8 p. m.
- March 13, Scientific Meeting, Orleans Parish Medical Society, 8 p. m.
- March 15, Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.

- Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.
Charity Hospital Surgical Staff, 8 p. m.
New Orleans Dental Association, 8 p. m.
- March 16, Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- March 17, I. C. R. R. Hospital Staff, 12:30 p. m.
- March 20, Hotel Dieu Staff, 8 p. m.
Clinico-pathologic Conference, Baptist Hospital, 8 p. m.
- March 21, Charity Hospital Medical Staff, 8 p. m.
- March 22, French Hospital Staff, 8 p. m.
- March 23, Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- March 28, Baptist Hospital Staff, 8 p. m.
- March 29, Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.
- March 30, Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- March 31, L. S. U. Faculty Club, 8 p. m.
New Orleans Hospital Dispensary for Women and Children Staff, 8 p. m.

During the month of February the Society held two meetings; the regular scientific meeting and a special scientific meeting. At the regular scien-

tific meeting a symposium on intensive methods of treatment of early syphilis was presented by Drs. Terrence E. Billings, Harry C. Knight and Owen F. Agee; Drs. M. T. Van Studdiford and V. M. Henington opened the discussion. At the special scientific meeting Dr. Frederick A. Collier, professor of surgery, University of Michigan, spoke on Carcinoma of the Rectum; Dr. Arthur W. Allen, lecturer in surgery, Harvard University and chief of the surgical service, Massachusetts general hospital, spoke on Gastric and Duodenal Ulcer; and Dr. Philip Wilson, clinical professor of orthopedic surgery, Columbia University, spoke on Care of Old Compound Fractures.

NEWS ITEMS

Dr. John H. Musser was recently elected to a ten-year term as trustee of the University of Pennsylvania. Trustees are elected by the Alumni Association.

I. M. Gage was recently promoted from lieutenant-colonel to colonel.

Maurice Lescale was recently promoted from captain to major.

Abe Golden was recently promoted from lieutenant to lieutenant-colonel.

At a recent meeting of the clinical staff of the Southern Baptist Hospital the following physicians were elected to office for 1944: Dr. Robert Sharp, chairman; Dr. Sam Hobson, vice-chairman; Dr. J. W. Reddoch, secretary; Dr. Jos. W. Wells, treasurer; Drs. E. H. Lawson, J. E. Bailey, Thos. B. Sellers and Robert Bernhard were elected to fill vacancies on the executive committee.

At a recent meeting of the Hotel Dieu staff, the following physicians were elected to office for 1944: Dr. Chaille Jamison, president; Dr. Frank Chetta, vice-president; Dr. J. Henry Larose, secretary-treasurer; Drs. J. M. Perret, H. T. Beacham, John S. Couret, Gilbert C. Anderson, Edmond Souchon, E. A. Socola, and Geo. J. Taquino, members of the executive committee.

Daniel J. Murphy, M. D., Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

C A L E N D A R

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

MOREHOUSE PARISH MEDICAL SOCIETY

At a recent meeting of the Morehouse Parish Medical Society the following officers were elected for 1944: President, Dr. E. L. Maddry, Bastrop; Vice-President, Dr. W. A. Rodgers, Bastrop; Secretary-Treasurer, Dr. B. J. Amoroso, Bastrop; Delegate, Dr. G. D. Williams, Mer Rouge.

ST. MARTIN PARISH MEDICAL SOCIETY

Following is a list of the new officers of the St. Martin Parish Medical Society. These officers will serve until January, 1945: President, Dr. L. A. Morrogh, Breaux Bridge; Secretary-Treasurer, Dr. L. Weinstein, Breaux Bridge; Delegate, Dr. S. D. Yongue, Breaux Bridge; Alternate, Dr. A. Corne, St. Martinville.

A MESSAGE TO MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

For some ten years the physicians of the United States have been subjected to a series of stresses such as have disturbed the orderly progress of medical science in no previous period of similar length. In 1860 Oliver Wendell Holmes wrote:

"The truth is that medicine, professedly founded on observation, is as sensitive to outside influences, political, religious, philosophical, imaginative, as is the barometer to the changes of atmospheric density."

The depression of 1929, the evolution of the Social Security Act, the first Wagner bill, the development of hospitalization and medical care insurance, the enrollment of a third of the active medical profession in the armed forces, and now the Wagner-Murray-Dingell bill represents a se-

ries of provocative crises. Each of these challenges was met by the House of Delegates, the Trustees and the officers of the Association with clearly defined statements of policy which the Association has disseminated widely. Under these policies the extension of medical service has proceeded steadily and everything possible has been done to maintain the quality of medical education and medical service at the high standard that has been our ideal. The continued pressure of the years has been climaxed by the Beveridge report, the report of the National Resources Planning Board and the introduction of the Wagner-Murray-Dingell bill. This comes when every physician not in the armed forces is giving of himself unstintedly without thought of time or physical capacity.

Today strange social philosophies pervade the radio, the press and the periodicals. Panaceas for medical problems are proffered by innumerable prescribers. Some preach distrust of medical organization, cast doubt on the loyalty of our leaders, sow dissension in our membership! These activities are no doubt a reflection of anxieties and fears. And they appear at a time when a united, loyal, solidly organized medical profession is more needed than at any previous time in our history! When our representatives appear before legislative hearings they are entitled to the loyal, enthusiastic, unified support of the constituent and component societies of the American Medical Association.

In some areas there are attempts at reorganization of the county medical society on a strictly business basis; attempts are being made to organize small groups of the states into sectional cliques; before the House of Delegates of one state a delegate actually urged a united opposition to the Southern states; here and there physicians, apparently inspired by lay employees or by the urging of outside agencies, would pour the funds of county and state medical societies, swollen by special assessments, into "public relations," as if this were some new and potent magic; there are occasional demands that the medical profession "unionize" and affiliate with one or the other of the major labor organizations. The far-seeing Oliver Wendell Holmes was right: physicians are "sensitive to outside influences, political, religious, philosophical, imaginative."

Now what are the facts? The trend of public thought is quite definitely against any such expansion of the Social Security Act as the Wagner-Murray-Dingell bill contemplates. The Council on Medical Service and Public Relations has been organized, has developed a program, has stated its policies, has secured a full time secretary, has expanded sources of information on legislative activities, is participating in public relations for the Association. The Board of Trustees has organized for suitable representation at any hearings

that may be called on legislation affecting the medical profession. The publications of the Association have reached the highest peak in their history in circulation and effectiveness. A poll proves that a majority of Americans interviewed consider the American Medical Association an organization interested in the advancement of medical science, an organization devoted to the approval of that in medicine which is sound and exposing that which is fraudulent—what the experts call a "favorable symbol." And all this accomplished at a time when the employees of the Association have been reduced by one-fourth by war activities or call to the armed forces, and when many others are likewise giving largely of their time to war activities.

The Board of Trustees pledge itself anew, as do the officers and employees of the Association, to do their utmost to carry out and to implement the principles, the policies and the mandates of the House of Delegates. To some 55,000 physicians who are in the armed forces the Board pledges all that the Association can do to maintain for them a medical profession free from the interference of political control. The Board is convinced that the House of Delegates will also do its utmost to hold the traditions of Americanism and American medicine inviolate until the physicians who are now with the armed forces return and themselves participate in determining the future of American medicine.

Board of Trustees: Roger I. Lee, M. D., Chairman; R. L. Sensenich, M. D., Vice-Chairman; Ernest E. Irons, M. D., Secretary; James R. Bloss, M. D.; E. L. Henderson, M. D.; William F. Braasch, M. D.; Edward M. Pallette, M. D.; Ralph A. Fenton, M. D.; Charles W. Roberts, M. D.

REACTIONS OF SOME MEMBERS OF CONGRESS TO THE SOCIALIZATION OF MEDICINE

The Bulletin of the Council on Medical Service and Public Relations, published by the American Medical Association, has sent out some quotations from letters of various Congressmen. It is to be noted that none of the Louisiana Congressmen are included in this list. It would be interesting if the members of the Louisiana State Medical Society have heard from their Congressmen to send their Congressional expressions of opinion about the Wagner-Murray Bill to the New Orleans Medical and Surgical Journal for publication. Even more important should be the attempt to have an expression of opinion from the Congressman of your district.

Congressman John C. Kunkel, Pennsylvania: "Personally, my own view is that the doctors should go out and explain the dangers of this bill to their patients. It is easy enough for them to sit back in their easy chairs and write to their Representatives in Congress but if they expect

to awaken public opinion to the difficulties which will arise, not only for the medical profession but also for the people for whom they care, then it is necessary for them to do something to create public opposition to the bill and a better understanding of it. It is perfectly obvious that this is a New Deal measure and it will have the support of the movies, the New Deal measure and most of the radio commentators, so the doctors start in with a tough job and the only way they can hope to win permanent success is by informing the public in conversations and in talking to their patients. I have told a number of doctors back home exactly the same thing."

Congressman Louis E. Miller, Missouri: "In my judgment this bill proposes to completely socialize medicine and make the members of the profession mere wards of the Government. In addition, I think it proper to state that the bill could control medical education and the medical schools of the country.

"The vicious implications of the bill are so far reaching that they should be brought to the attention of every member of the medical profession and a concerted effort should be made to defeat it. I shall oppose the passage of the bill with every resource at my command."

Congressman Henry C. Dworshak, Idaho: "I have received numerous letters from doctors concerning this proposed legislation, and it is apparent that there is almost unanimous opinion that it would be unwise to foster such revisions in our social security system at this time.

"You probably are aware that throughout my Congressional career, I have actively opposed all efforts to socialize our country or our people. I believe that we must insure the provisions of our free enterprise system, and make it possible for Americans to enjoy not only the safeguards under our Constitution, but likewise to have an opportunity to make individual progress commensurate with each individual's ambition and ability.

"It is not likely that this bill will be presented to the House for action in the near future. I assure you, however, that I shall keep in mind your views, and that I shall carefully scrutinize any legislation similar to S. 1161."

Congressman Lyle H. Boren, Oklahoma: "I am unalterably opposed to socialized medicine in any of its forms or anything tending that way. I was mighty glad to hear from you and receive your views."

Congressman Sam Hobbs, Alabama: "Thank you for your letter of the 15th concerning the Wagner Bill which you understand would have the effect of socializing medicine.

"I realize the tragedy of such a situation if this Bill would accomplish it, and assure you it will be most carefully studied in the light of your opposition. I appreciate your letter."

Congressman N. M. Mason, Illinois: "I am glad

to inform you that I am opposed to the socialization of medicine and hospital care, and therefore shall oppose these bills when they come before the Congress for consideration."

Congressman Fred A. Hartley, Jr., New Jersey: "In response to your letter, I wish to advise you that I am opposed to socialized medicine, and shall do all I can to prevent the passage of S. 1161."

Congressman James C. Auchincloss, New Jersey: "I am opposed to this measure (S. 1161), and am on record to that effect. As the bill is at present drawn up, I will vote against it should it be brought to the House for action."

Congressman Harry L. Towe, New Jersey: "Thanks for your letter of October 25 in opposition to S. 1161.

"I believe that it would be unwise to enact legislation of this character and I intend to vote against it."

—From the Bulletin of the Council on Judicial Service and Public Relations, published by the American Medical Association.

THE IVY DAY PROGRAM

The Senior class of Tulane University Medical School celebrated Ivy Day on February 10, the Ivy Day address being given by Dr. Leon J. Menville, Professor of Radiology.

The graduating class presented as a gift to the medical school new lighting fixtures for the uptown library.

The Walter Reed Memorial Medal which is given by the Louisiana State Medical Society, was presented to Dr. Harold A. Ferris for his thesis on "Modern Concepts of the Epidemiology of Yellow Fever," by Dr. H. W. Kostmayer in the absence of Dr. deGravelles who, at the last minute, found he would be unable to be present to make this award.

The Isadore Dyer Memorial Prize for Medical Scholarship was won by Dr. Maridel Saunders.

The Sidney K. Simon Prize was given to Dr. Robert S. Picard. The award for the best thesis presented to the Department of Medicine was divided between Dr. Norman W. Todd and Dr. Henry Laurens, Jr.

The president of the class, Dr. Broox C. Garrett, gave a short talk and the ivy was planted by Dr. John Laurens and Dr. E. W. Carrigan.

TULANE MEDICAL SCHOOL GRADUATION

Commencement exercises for the School of Medicine were held in McAllister Auditorium on Saturday morning, February 12. For the first time in many years the graduation exercises were held for the School of Medicine alone.

The commencement address was delivered by Dr. Lewis H. Weed, director of the School of Medicine, the Johns Hopkins University.

Commissions were awarded to a large number of men in the Army Medical Corps by Captain

George Allen Burgess, M. C., A. U. S., and in the Navy by Captain Forrest U. Lake, U. S. N. (Retired), commanding Tulane Naval unit. Diplomas were presented by Dean Kostmayer.

ANNUAL CONGRESS ON MEDICAL EDUCATION AND DEFENSE

The meeting was held in Chicago on February 14-15. An entire morning session was devoted to problems of post-war medical education. The second session was given over to wartime problems in medicine and medical education, in which Major General Lull, Vice-Admiral Ross T. McIntire and Surgeon General Parran participated.

The Federation of State Medical Boards held a dinner Monday evening. The following day the meeting paid attention very largely to the subject of medical licensure and its wartime implications.

MEDICAL CONFERENCES

There were five important conferences held in Chicago at the Palmer House on February 12-16, as follows: Midwinter Conference on Pre-Paid Medical Service, National Conference on Medical Service, Annual Congress on Medical Education, Annual Congress on Industrial Health, and the Federation of State Medical Boards. This was a very intensive and well attended meeting with wonderful programs on vital present-day subjects which are now facing the medical profession.

Attending these meetings were Dr. B. I. Burns, Dean of Louisiana State University Medical School; Dr. H. W. Kostmayer, Dean of Tulane University Medical School; Dr. John H. Musser, member of the Council of Medical Education of the American Medical Association; Dr. Roy B. Harrison, Secretary of the Louisiana State Board of Medical Examiners, and past president of the Federation of Boards. Dr. Guy Caldwell was also in Chicago at the same time attending the American Board of Orthopedic Surgeons. Dr. P. T. Talbot, secretary-treasurer of the Louisiana State Medical Society, also attended the above conferences.

TOURO INFIRMARY

The regular meeting of the medical staff of Turo Infirmary was held on Wednesday, February 9 at 8 p. m. The following program was presented: Clinico-Pathologic conference by the Department of Pathology, with a clinical discussion by Dr. P. J. Kahle; Small Intestine Changes Associated with Chronic Bacterial Dysenteries by Drs. D. N. Silverman and Alan Leslie; Resuscitation of Babies Delivered by Cesarean Section by Dr. J. D. Russ.

CHARITY HOSPITAL

A meeting of the Medical Division of the Charity Hospital Visiting Staff was held on Tuesday,

February 15 at 8 p. m., in the auditorium of the hospital. The following program was presented: Case Report by Dr. W. A. Sodeman; Case Report by Dr. Byron M. Stuart; Case of Weil's Disease Treated with Penicillin by Dr. L. Friedman.

DR. RAMON CASTROVIEJO

Dr. Ramon Castroviejo, distinguished member of the staff of the Institute of Ophthalmology of Columbia-Presbyterian Medical Center, New York, was a guest of Dr. Wm. B. Clark, head of the Department of Ophthalmology of Tulane University, on January 11, 1944. He was the guest of honor at a dinner held at the St. Charles Hotel under the auspices of the leading ophthalmologists of the city, with forty representatives of the specialty in attendance. Following the dinner, Dr. Castroviejo delivered a lecture on "Modern Trends in Ophthalmic Surgery," to a large representative audience at the Auditorium of the Charity Hospital. The lecture was beautifully illustrated by a series of moving pictures of Dr. Castroviejo's original operations. Of particular interest were his pictures of the operation of keratoplasty or corneal grafting—one of the greatest contributions of surgery for the cure of corneal blindness—which he has done so much to perfect.

After the meeting, Dr. Castroviejo visited the LaGarde Army Hospital to see the war-wounded eye patients by invitation of the staff. During his brief visit, Dr. Castroviejo was entertained by Dr. Matas and many admiring colleagues and friends.

INFECTIOUS DISEASES IN LOUISIANA

The Louisiana State Board of Health reported for the week ending January 1 an astonishingly large number of influenza cases, 4,136 as contrasted with the previous four weeks of 326. Other diseases in double figures reported in this week included 979 cases of syphilis, 826 of gonorrhea, 49 of chancroid, 28 of other forms of tuberculosis, and 27 of pulmonary tuberculosis, 15 of pneumococcal pneumonia.

Amongst "other diseases" there were also listed 62 cases of unclassified pneumonia. The following week still showed there was an active epidemic of influenza throughout the state, 4,206 were listed. This was followed by 37 cases of hookworm infestation, 27 of pulmonary tuberculosis, 16 of pneumococcal pneumonia, and 12 of other forms of tuberculosis. There were also listed under "other diseases" 43 cases of unclassified pneumonia.

The following week showed that the influenza epidemic had reached its peak, there being 6,429 cases listed, followed by 84 cases of unclassified hookworm infestation, 27 of pulmonary tuberculosis, 21 of pneumococcal pneumonia, 19 of septic sore throat, 15 of other forms of tuberculosis,

17 of meningococcus meningitis, 11 of cancer, and 10 of chickenpox. The large number of meningitis cases came for the most part from Orleans Parish with 12 such cases, followed by three from Jefferson Parish. There was a reduction in the number of cases of influenza for the week ending January 22, with 5,603 cases being recorded. There were also 27 cases of unclassified pneumonia, 19 of tuberculosis and of measles, 12 of hookworm and 11 of chickenpox.

There was a still further reduction in the instance of influenza, 1,990 cases being listed, followed by 37 of septic sore throat, 32 each of pulmonary tuberculosis and of measles, 20 each of mumps and pneumococcic pneumonia, 13 of chickenpox, and 12 of miscellaneous forms of tuberculosis, plus 10 additional cases of meningococcus meningitis, all of the cases coming from Orleans except a few scattered incidences in other parishes. The week ending February 5 found 1,266 cases of influenza reported this week for a total slightly under 20,000 for the year 1944. This gives some indication of the widespread epidemic that has been present the first part of this year. There were listed also 37 cases of unclassified pneumonia and 24 of pneumococcic pneumonia. Twenty-nine cases of pulmonary tuberculosis were discovered this week, followed in frequency with 21 cases of measles, 18 of mumps, 17 of chickenpox, 13 of diphtheria, 11 of meningitis, and 10 of scarlet fever. This week also included the combined total of venereal diseases for the four-week period. In this time there were found to be 1,449 cases of gonorrhea, 1,287 of syphilis, 113 of chancre, and 25 of lymphopathia venereum.

HEALTH OF NEW ORLEANS

The Bureau of the Census, Department of Commerce, reported that for the week which came to a close on January 15, there occurred 201 deaths in New Orleans as contrasted with 186 the previous week. One hundred and thirty-nine of these were white, 62 were in the colored population, and there were 10 infant deaths, divided equally between the two races.

The following week which terminated January 22, 194 people died in New Orleans of whom 130 were white and 64 were colored, and 12 were children under one year of age. The succeeding week there was quite a smart decrease in the number of deaths, 172 people dying in the city, divided 113 white, 59 colored, 20 were children under one year of age. The next week the deaths were up in number, totaling 203. Of the people dying in New Orleans 154 were white and 49 were colored, with a rather remarkable total of 31 deaths of children under one year of age, 20 of these children being colored.

The death rate for the first part of 1944 has been very much higher than in the past. For example, in this particular week, the three-year

average has been 151 and the previous week 163. There was a reduction in the number of deaths in the week ending February 12, this time to figures more closely approximating the average. One hundred and forty-six people expired in the City of New Orleans, 97 of whom were white and 49 of whom were negroes. There were 11 infants under one year of age in this group.

DR. MILLARD REID PURNELL (1869-1943)

Dr. Millard R. Purnell of Shreveport was born in 1869 and graduated in medicine from the Memphis Hospital Medical College in 1891. Dr. Purnell was a medical examiner for the city induction center, and died in Shreveport on December 6, 1943.

DR. JOSEPH W. MURPHY (1877-1943)

Dr. Joseph W. Murphy of Monroe, was born in 1877, and graduated from the University of Nashville in 1908. Dr. Murphy was on the staffs of the E. A. Conway Memorial Hospital and the St. Francis' Sanitarium. He died in Monroe on December 9, 1943.

DR. CLARENCE J. WICHSER (1891-1944)

Dr. Clarence J. Wichser of New Orleans was born in New Orleans in 1891. He graduated in Medicine from Tulane University in 1920 and had practiced in New Orleans continuously since then. Since 1930 he had been physician for the sewerage and water board. He was an active member of many fraternal organizations in New Orleans as well as many medical organizations. He died on January 25, 1944. Dr. Wichser is survived by his widow, three daughters and two sons.

DR. FRANKLIN V. BOYD (1879-1944)

Dr. Franklin V. Boyd of Opelousas, was born in Morgan City, La., in 1879. He received his medical degree from Tulane University in 1902. He first practiced in Texas. Later he moved to Lafayette and then to Basile. He accepted the position of health director in Lake Providence in 1934 and in 1936 was transferred to Opelousas to head the St. Landry unit. At the time of his death on January 30, 1944, Dr. Boyd was secretary-treasurer of the St. Landry Parish Medical Society. He is survived by his widow and three sons.

DR. THOMAS STARK (1865-1944)

One of the most well known members of the State Medical Society expired in Thibodaux, February 10, at the age of 78. Dr. Thomas

Stark was not only a prominent physician and a most active one, but also he was a civic leader in his home town. At various times he served as coroner and on the school board. He ultimately became president of the parish local board. His vocation was medicine but his avocation was politics. He had great political influence throughout south Louisiana.

DR. A. M. CHARLET

(1870-1944)

Dr. A. M. Charlet of Belle Alliance was born in 1870, graduated in medicine from Tulane University in 1891. Dr. Charlet died on February 11, 1944.

WOMAN'S AUXILIARY

ORLEANS PARISH

OFFICERS FOR THE YEAR 1944

President	Mrs. John Dunn
1st Vice Pres.....	Mrs. J. Kelly Stone
2nd Vice Pres.....	Mrs. Daniel N. Silverman
3rd Vice Pres.....	Mrs. Edmond Souchon
4th Vice Pres.....	Mrs. Earle Brown
Recording Secretary	Mrs. Lloyd Kuhn
Corresponding Sec.	Mrs. H. F. Brewster
Treasurer	Mrs. Jonas Rosenthal
Parliamentarian	Mrs. Daniel J. Murphy
Historian	Mrs. William Kohlman
Publicity	Mrs. Jerome Landry

Chairmen of Standing Committees:

Program	Mrs. Agnees Mogabgab
Public relations.....	Mrs. Jules M. Davidson
Red Cross	Mrs. Edmond Souchon
Registrations	Mrs. George Taquino
Samples	Mrs. Daniel N. Silverman
Telephone	Mrs. Louis Leggio
Tuberculosis	Mrs. Kelly Stone
Cancer	Mrs. Edwin Socola
Clothes	Mrs. Carroll Gelbke
Commemoration	Mrs. Aynaud Hebert
Community Chest	Mrs. N. H. Polmer
Contact	Mrs. Fred Fenno
Courtesy	Mrs. Theodore Simon
Defense	Mrs. E. A. Fatter
Hostess	Mrs. Cassius Peacock
Membership	Mrs. Monte Meyers
Motor corps	Mrs. M. Earle Brown
Notifications	Mrs. C. Grenes Cole
Periodic health.....	Mrs. Paul G. Lacroix
Printing & supplies.....	Mrs. J. Bailey

On Wednesday, January 12, the regular monthly meeting was held at the Orleans Club on St. Charles Avenue with the following members and guests present:

Mesdames Agnees Mogabgab, J. W. Fanz, Donovan C. Browne, H. F. Brewster, Cassius L. Peacock, R. N. Penick, Jules M. Davidson, John S. Dunn, W. C. Rivenbark, L. Burt, E. Harris, Samuel A. Romano, Joe Wells, Waldemar Metz, N. H.

Polmer, S. Salimon, Jr., H. Greenberg, E. S. Phillys, George Taquino, W. A. Gillaspie, W. R. Buffington, S. M. Blackshear, J. E. Bailey, O. Joachim, Wm. Kohlmann, D. N. Silverman, Joseph J. Ciolino, A. J. Tomassi, Clarence Parent, Wm. J. Rein, M. Earl Brown, Jerome Landry, Arthur B. Brown, H. Theodore Simon, F. J. MacPherson, Rawley Penick, Louis Leggio, J. Minderman, E. A. Fatter, J. Kelly Stone, C. Greenes Cole, Monte F. Meyers, Walter C. Hava, Edwin Socola, Aynaud H. Hebert, Roy B. Harrison, Tracy Gattley, J. W. Townsend, Hermann Gessner, Edgar Arbour and Miss Leona Wallbillich.

Hostesses for the evening were: Mesdames John Dunn, J. Kelly Stone, Dan Silverman, Edmond Souchon, M. Earl Brown, Lloyd Kuhn, Jonas Rosenthal, H. F. Brewster, Dan Murphy, Jerome Landry, William Kohlmann, all are members of the board.

Following the meeting tea was served, Mrs. Kelly Stone and Mrs. Dan Silverman presided at the tea table.

Dr. Edwin Zander, the newly-elected president of the Orleans Parish Medical Society was the guest speaker of the evening.

Miss Jesse Tharp entertained the group with a play "The Miracle of the Danube" by Maxwell Anderson.

The program was concluded by Mrs. Walter Hava playing the Star Spangled Banner.

ANNUAL REPORT OF THE WOMAN'S AUXILIARY TO THE ORLEANS PARISH MEDICAL SOCIETY

Due to the sincere friendliness and cooperation of my executive board and committees, this has been a short and sweet year. It seems as though the installation was only yesterday.

These twelve months, as your president, have passed so swiftly and pleasantly that I can hardly realize it is time to give to you my annual report.

On December 9, 1942, my first honor was to present to our retiring president, Mrs. Paul G. Lacroix the Auxiliary's official pin.

Our vice presidents, each have the responsibility of a chairmanship and have fulfilled their duties faithfully.

Mrs. Edwin Socola, as recording secretary, has kept excellent minutes of all board and regular meetings.

Mrs. Jerome Landry, our treasurer, has kept her accounts in perfect order leaving \$170.93 in the checking account and \$603.93 in savings account. Frozen account \$170.83. Interest \$12.53. Total \$774.89.

We have two defense bonds of \$100 each in the safe of Orleans Parish Medical Society. No outstanding bills.

Mrs. Daniel Murphy, corresponding secretary, took care of all correspondence, including eleven

invitations sent to commanding officers in various branches of government service inviting doctors' wives to our meetings.

Mrs. Otto Joachim, our parliamentarian, has kept me on the right path and gave to the commemoration fund a bond.

Mrs. Carroll Gelbke, our historian, has been very busy this year, you will agree, when you take a look through our history book. It speaks for itself.

Mrs. William Kohlmann, publicity chairman, sent notices to both papers and really gave us full share of publicity throughout the year.

To Mrs. Theodore Simon, our program chairman, much credit is due for the entertainment and programs which are listed below:

(1) *January* we had Mrs. Hilda Phelps Hammond's discussion on "Homer Lee's Prophecy."

(2) *February* Mrs. Benjamin Yancey presented an interesting talk, "Why Peace Plans Now."

(3) The *March* program was unusual—Mr. Robert Wauschope talked on American cities and modern Indians in Middle America, showing pictures taken by himself.

(4) Mrs. James Fortier described "The Vieux Carre" at our April meeting.

(5) A book review in *May*, by Mrs. Alexander Donovan entitled "The Valley of Decision."

(6) *October* we were entertained by Mrs. C. C. Henson, with a review of "Roughly Speaking."

(7) *November* we had Dr. Daniel Murphy who gave us a very fine talk on the Murray bill—and we also had a talk on "The Balkans" by Mrs. Hilda Phelps Hammond.

(8) *December* or today's meeting we will have Mrs. Henry Hartmann—"A Tree Grows in Brooklyn."

Mrs. James Warren, chairman of hostesses, has arranged and planned all of our delightful teas, selected hostesses, calling on each member to serve once during the year.

Membership chairman, Mrs. Aynaud Hebert secured eight new members, a most excellent record during these times.

The notification cards for all board and regular meetings have been sent out regularly by Mrs. Charles Odom totaling 2200 cards, for which she deserves many thanks.

Our telephone chairman, Mrs. Brierre, assisted by Mrs. E. A. Fatter, have given excellent service.

Mrs. Paul Lacroix, our past president, and registration chairman, with her capable committee, has registered and issued name cards at all meetings.

Courtesy chairman, Mrs. Roy B. Harrison, has made many visits to prospective members, sick doctors and their families and other members throughout the year, and regrets that gasoline rationing slowed her down a bit.

Mrs. Edmond Souchon was ready and willing to serve at all times.

Periodic health chairman, Mrs. William Harris, reports 300 cards sent to members for health examination.

Red Cross—Mrs. John Dunn, who is also our president-elect, has devoted every Friday at Red Cross headquarters representing our auxiliary and reports seventy-five auxiliary workers whose total hours were eleven thousand plus—that included blood bank, cutting and making bandages, motor corps, canteen service, first-aid and home nursing, truly a marvelous report.

Mrs. Waldemar Metz, cancer chairman, also woman's field Army chairman, whose report shows excellent work, her committees included many auxiliary members whose help in the drive produced nearly three thousand dollars. Many bandages made for patients not hospitalized.

Mrs. T. T. Gately, tuberculosis chairman, has a team of twenty-four auxiliary members to work starting December 13 to December 18—booth at the St. Charles Hotel.

Mrs. Jonas Rosenthal was ever ready to help with the collection and distribution of clothes, if needed.

Samples were collected by Mrs. H. B. Alsobrook, several hundred being distributed to "Little Sisters of the Poor" and "Home for Incurables."

Public relations chairman was Mrs. George Taquino, our state president, who attended all meetings on health, Red Cross, defense projects and professional meeting on Wagner-Murray bill.

Our contact chairman, Mrs. C. Grenes Cole, was my shoulder on which to lean and has always been more than ready to do her part. Good old Halet.

The commemoration chairmanship was under the guidance of Mrs. Jules M. Davidson and the report was most gratifying, having helped two indigent widows to the amount of \$390. We received \$159.50 in cash and a \$100 bond.

Community Chest under one of our capable chairmen, Mrs. Theodore Simon, reports \$485 raised during the drive.

Printing and supplies were taken care of by Mrs. Anees Mogabgab.

Always on hand to sell bonds and stamps was Mrs. Herman Gessner. With the help of Mrs. Taquino they sold twenty-seven thousand nine hundred dollars (\$27,900) of bonds and twenty-one dollars and ten cents of stamps.

It has been our pleasure this year to have entertained the wives of doctors in service at each meeting, also to have had the Dental Auxiliary members for our April meeting and our mothers in May. Corsages were given to our mothers.

We celebrated Doctors' Day, March 30, with a donation of \$25 to the indigent widow's fund. The philanthropic activities have been very creditable.

Thirty dollars (\$30) each month were divided between case one and case two—twenty-five dol-

lars to cancer control, twenty-five dollars to tuberculosis and ten dollars to state indigent widow's fund. Books to victory book campaign for soldiers—pillows for O. C. D. Renewal of magazine subscription to La Garde Hospital recreation library and a Christmas present to each of our indigent widows.

Thanks to Doctor Alsobrook for giving us a fine talk at our January meeting and to graduate medical assembly for inviting us to be hostesses at their tea given for visiting wives.

We are very grateful to Baton Rouge Auxiliary for entertaining us so graciously during the state meeting in May, where I gave our annual report.

I wish to thank Doctor George Taquino, our contact chairman and members of the medical society for their hearty cooperation and for the use of the board room and their many other courtesies; Mrs. Born and the personnel of the Orleans Club for use of their board room and their untiring efforts to make our meeting and teas so pleasant.

And now I come to that which will always be dear to me. The cooperation and loyal support given to me by the board which has made my term as president just one grand pleasure from beginning to end. It has been an honor and a great pleasure to have been chairman to the best, the nicest and most helpful of all boards.

I wish to thank the members for their cooperation and assistance and to express my thanks again for the honor and confidence bestowed upon me. My wish this year was to hold our auxiliary to-

gether and that my year would end in world peace. The first part of my wish was granted. Let's hope the latter will be to my successor, Mrs. John Dunn, to whom I offer my loyal support and sincere wishes for a very successful year, and hope she will enjoy as happy a one as I have had.

Respectfully submitted,

Mrs. Cassius L. Peacock,
President.

OUACHITA PARISH

Luncheon in the Blue Room of the Frances hotel brought members of the Woman's Auxiliary to the Ouachita Parish Medical society together for an interlude of conversation over the coffee cups and a program later featuring a review of "The Apostle" by Mrs. A. D. Tisdale.

Mrs. J. T. Gallaspy, Mrs. J. Q. Graves and Mrs. B. M. Meengs, served as hostesses on this occasion and presided over the luncheon table.

Mrs. P. L. Perot, president, introduced two new members, Mrs. J. E. McConnell and Mrs. F. J. Willey.

The following members were present: Mrs. J. E. McConnell, Mrs. J. Q. Graves, Mrs. F. P. Rizzo, Mrs. Ralph Talbot, Mrs. J. T. Gallaspy, Mrs. J. B. Vaughan, Mrs. A. B. Gregory, Mrs. H. V. Collins, Mrs. P. L. Perot, Mrs. A. D. Tisdale, Mrs. F. J. Willey, Mrs. A. G. McHenry, Mrs. R. V. McMichael, Mrs. S. W. Shelton, Mrs. M. B. Meengs, Mrs. W. L. Bendel.

Mrs. M. C. Wiginton,
Chairman, Press and Publicity.

BOOK REVIEWS

Microscopic Technique in Biology and Medicine:

By E. V. Cowdry. Baltimore, The Williams and Wilkins Co., 1943. Pp. iv+206. Price, \$4.00.

This volume is an extremely useful tool in any laboratory where microscopic work is done. Workers and investigators in biology and medicine who are interested in the minute structure of living things will find here definite information pertaining to problems concerned with the demonstration of microscopic structure. The book is replete with valuable hints, shortcuts, advice, and guides to yield best results with the simplest and most adequate method. The key feature of the book is the alphabetical arrangement, making its material readily accessible. Thus the reader may easily turn to the name of a structure (for example, mitochondria, negri bodies, skin), an element (iron, sodium, mercury), an enzyme, a dye or a particular technic in which he is interested. References are numerous and are entered in the appropriate places.

CHARLES MIDLO, M. D.

Synopsis of Tropical Medicine: By Sir Philip Manson-Bahr, C. M. G., D. S. O., M. D., F. R. C. P. Baltimore, The Williams and Wilkins Co., 1943. Pp. 224. Price, \$2.50.

For even a specialist like Sir Philip Manson-Bahr to attempt a brief "vest pocket" synopsis of the diseases of warm climates requires more than ordinary courage. In some respects the volume is a success, in others a failure. In successive chapters the following subjects are presented:

I. Protozoal Diseases (malaria, leishmaniasis, African trypanosomiasis, Chagas' disease, amebiasis);

II. Spirochaetal Disease (relapsing fever, leptospirosis, seven-day fever, rat-bite fever, yaws, pinta);

III. Rickettsia Diseases (the typhus group, bartonellosis);

IV. Bacterial Diseases (plague, tularemia, melioidosis, undulant fevers, bacillary dysenteries, cholera, enteric fevers, enteric-like fevers, leprosy, etc.);

V. Virus diseases (yellow fever, Rift Valley

fever, dengue, phlebotomus fever, psittacosis, pock diseases, rabies, lymphogranuloma inguinale, encephalitis japonica, etc.);

VI. Fungous Diseases;

VII. Nutritional Diseases;

VIII. Climatic Diseases;

IX. Miscellaneous Group;

X. Vegetable Poisons;

XI. Animal Poisons;

XII-XV. Metazoal Diseases;

XVI. Laboratory Methods.

On the whole the outline is excellent and the terminology is good. It is difficult to understand why chiniofon is so underrated in the treatment of amebiasis (p. 36) and why diodoquin is entirely omitted. Similarly, in the treatment of hookworm disease (pp. 176-178), tetrachlorethylene is not mentioned. These failures to include well accepted procedures in both American and British medicine would appear to be based on prejudice rather than oversight.

The most serious criticism which the reviewer has of this "Synopsis" is that it skims a broad surface but fails to provide enough information about any particular subject to serve as a satisfactory guide for the clinician previously inexperienced in these particular diseases.

The volume is essentially free of typographical errors, but many of the pages are "smudged" so that they are not easily read. There are five plates in black and white, rather two darkly printed. A comprehensive index is provided.

ERNEST CARROLL FAUST, Ph. D.

A Manual of Medical Parasitology: By Clay G. Huff. Chicago, The University of Chicago Press, 1943. Pp. 88. \$2.00.

This manual is the outgrowth of required work in medical parasitology at the University of Chicago and includes the following subjects: I. Trematodes or Flukes; II. Cestodes or Tapeworms; III. Nematodes or Roundworms; IV. Intestinal Protozoa; V. Hemoflagellates; VI. Malarial Parasites of man; VII. Mosquitoes Which Transmit Disease; VIII. Flies Which Transmit or Cause Disease; IX. Other Bloodsucking Insects Which Transmit Disease; X. Ticks and Mites—Order Acarina; XI. Laboratory Diagnosis of Parasitic Infections. There are eleven good zinc plates of figures and an excellent colored plate on malaria parasites. It is unfortunate that on page three an attempt has been made to combine the life cycles of two human flukes with essentially different modes of development, namely, the blood fluke and the Chinese liver fluke. Likewise, the figure on page 19 is of a nematode not parasitic in man but rather in the cockroach. Why could not a human nematode parasite have been used?

The essentials of etiology, geographical distribution, epidemiology, pathology and laboratory diagnosis are provided for each parasite, but

symptomatology, treatment and prevention are omitted. This manual is apparently designed for the first- or second-year medical student, for whom the subject matter is excellent except failure to consider the control of parasites. The omission of the clinical aspects and the method of handling the subject matter are serious handicaps to the use of this little volume during the clinical years of medicine.

The manual is attractively printed, the type is clear and the quarto size is well adapted for laboratory use. There is a page of important reference books and a good author-subject index.

ERNEST CARROLL FAUST, Ph. D.

Internal Medicine in General Practice: By Robert Pratt McCombs. Philadelphia, W. B. Saunders Co., 1943. Illus. Pp. 694. Price \$7.00.

McCombs has attempted the impossible. This volume on the practical aspects of internal medicine intended for the general practitioners and students was derived from the author's experience in postgraduate instruction. While it unquestionably is of excellent compilation and is of novel lecture type presentation it is certainly too incomplete for student consumption and probably too omissive for acceptable postgraduate reference. The conciseness is commendable and the summarization of each section is novel.

In emphasizing the fundamentals of diagnosis the author admirably denounces the impressive "snap diagnosis" and then expounds the virtue of diagnosis made without roentgen or laboratory studies. It is rather confusing to find one debating an issue alone; certainly the general practitioner and student need a better understanding of these diagnostic procedures and it is acceptable opinion that their ignorance of their applicability results in such advanced pathology reaching the urban physician from his country reference.

The reviewer is pleased to find consideration given to duodenitis, nutritional deficiencies, the exploitation of vitamins, the virtues of crude liver extract, the virus or atypical pneumonides, sulfamido toxicities and the diseases in which there is no indication for the sulfamido derivatives. Even a brief note on penicillin is included. These indicate a completeness of thought in the preparation.

On the whole, however, the publication is one of "War Time" in which too many inadequacies have possibly been enforced. To note only a few pertinent lacks: one finds no mention of cephalin-flocculation, no controversial statement on the poorly accepted Meulengracht regime and no mention of the digitalis glucosides.

I cannot endorse this volume as a commendable abstract to substitute for our acceptable texts nor is it an adequate supplement to the already published abstracts on the various specialties embodied in internal medicine. It is, however, a commendable war-time effort on Lieutenant Mc-

Comb's part and will possibly be the outstanding concise presentation on internal medicine for this period.

GORDON MCHARDY, M. D.

Fractures and Dislocations: By Edwin O. Geckler, M. D. Third edition, Baltimore, The Williams and Wilkins Co., 1943. Pp. 361. Price \$450.

The author proposed in his preface to "condense the subject of fractures and dislocations without the omission of important details." This he accomplishes very well. The text is explicit enough without being verbose and unnecessarily lengthy. Prototypes of all varieties of fractures are described and satisfactory treatment outlined for each. Illustrations, which are so important in a work of this kind, are well chosen and unlike some other texts, seem to have been selected with more consideration for what information they may impart to the student than for what advertising value they may have for the author. Diagrams are frequently used and are most instructive. Undoubtedly the author may have chosen roentgenograms of personal cases to replace many of the sketches, but only, the reviewer feels, at a loss of some of the teaching value of the illustrations. This is an outstanding short book on fractures.

The reviewer would have been more pleased to find his name spelled correctly on page 337.

HOWARD MAHORNER, M. D.

Quarterly Review of Medicine: Vol. 1, No. 1 (November, 1943). 314 Randolph Place, N. E., Washington, D. C. \$9.00 per year.

The need of clinical abstract journals in the specialties has been realized for some years. The appearance of quarterly journals of abstracts prepared by the workers of the Washington Institute of Medicine, from material available in the Army Medical Library, will therefore be welcomed.

The editorial staff of the *Quarterly Review of Medicine* is composed of leading physicians of the country. Sections of the Review are devoted to Acute Infectious Diseases, Diseases of the Cardiovascular System, Diseases of the Digestive System, Diseases of the Bones, Joints and Muscles, Metabolic Disorders, and a General Section of articles of broader interests. The first number includes 71 abstracts as well as an author and subject index to the issue.

Abstracts of only five articles from Spanish journals, one from a Portuguese journal and two from British journals are included in this first number. It is to be hoped that future issues will give a more extensive survey of foreign medical material.

The *Quarterly Review of Medicine* should fill a useful purpose in aiding the busy physician to keep abreast of progress in medical thought. Separate but similar publications cover the fields of Otorhinolaryngology, Obstetrics and Gynecology, and Surgery.

MARY LOUISE MARSHALL.

Backache and Sciatic Neuritis: By Philip Lewin, M. D. Philadelphia, Lea and Febiger, 1943. Pp. 745. 235. Illus. Price \$10.00.

This book is an encyclopedia of knowledge pertaining to the back. It is no mere handbook, and there are no new or startling facts presented in it. Dr. Lewin has brought together a tremendous amount of information with direct or indirect bearing on the general broad scope of the subject. There is a most comprehensive bibliography of over 800 references.

Much of the material is too elementary to be of real value, and many of the 745 pages deal with such indirectly correlated subjects as the technic of giving parenteral fluids. On the other hand, it answers a most urgent need for a text covering the details of an orthopedic examination of the back. The medico-legal importance of good records, a discussion of the technics in various types of physiotherapy, and some correlation of neurological, medical, psychiatric and orthopedic aspects of the problem are all included.

Many rare and unusual considerations pertaining to backache and sciatic neuritis are mentioned. Every imaginable disease seems to be discussed.

The reviewer recommends the book as a valuable storehouse of information, not as a brilliant contribution to the progress of orthopedics.

DONALD T. IMRIE, M. D.

Therapy of the Neuroses and Psychoses: By Samuel Henry Kraines, M. D. 2d ed. rev. Philadelphia, Lea and Febiger, 1943. Pp. 567. Price, \$5.50.

In the reviewer's opinion, this splendid book accomplishes just what it starts out to do—to be a better one than the last edition. It deserves even more praise than the reviewer gave the first edition.

In this new edition the chapter, on Psychoanalysis and Related Schools, has been deleted to provide space for new material. The text has been expanded to include new chapters on The Psychoses, Shock Therapies, Psychiatric Interview Technics and Neuropsychiatry Incident to War. There is an excellent, timely and most informative section on Neuropsychiatric States Induced by War which includes a detailed discussion of social psychiatry, selective service problems, psychiatric

states in training centers and "nervous breakdowns" in combat.

This is far and away the best work of its kind for both the student and practitioner. Dr. Kraines is one of the most stimulating, original, and profound psychiatric experts, and surely the most lucid, writing in English today.

C. P. MAY, M. D.

Elements of Medical Mycology: By Jacob H. Swartz. New York, Grune and Stratton, 1943. Pp. 179. Price, \$4.50.

The introduction to this little volume is written by Dr. Fred D. Weidman, the dean of American pathologists, especially interested in dermatological conditions, who also read the manuscript. This should be a guarantee of the soundness of the work presented. In the preface it is made clear that the work is intended as a guide for practitioners and not as a complete presentation of either the mythological or the clinical aspects of the subjects.

There are nine chapters. Chapter I is a general discussion of the subject, including a classification of the pathogenic fungi; Chapter II, the diagnosis of fungus infections, in which special stress is laid on the laboratory features; Chapter III covers the blastomycetes; Chapter IV, the genus *Microsporum*; Chapter V, the genus *Trichophyton*; Chapter VI, other pathogenic fungi; Chapter VII, common contaminants and probable pathogens. Chapter VIII is devoted to immune reactions. Those interested in immunity will note with approval the conservative attitude on skin tests as applied to the field of mycology. Chapter IX is devoted to sulfanilamide and its derivatives in mycological conditions.

The various subjects are covered by a discussion of the mycological aspects followed by the clinical, the latter including a brief but adequate section on treatment. There are well chosen references at the end of most of the chapters. Original illustrations are numerous, so numerous, indeed, that on page 145 it has been necessary to insert a photograph, illustrating *Tinea Versicolor*, in the text dealing with the disease known as mycetoma.

At the end of the book will be found a folding chart, summarizing mycological and clinical data, however, omitting treatment.

To one interested in the preventive aspects of medicine it is pleasing to find two pages devoted to prophylaxis against members of the genus *Trichophyton*. The instructions for the prevention of infection are detailed, but not likely to be adhered to closely. In this section the statement

is made that the value of the antiseptic foot bath has not been established. In the same section, under swimming pool sanitation, personal bathing shoes, worn going to and coming from the pool, are regarded as important.

This little volume should prove of value to anyone called on to deal with clinical conditions due to microorganisms of the group considered, general practitioners as well as those specializing in dermatology, although the discussions are hardly so extensive as the latter might consider desirable.

G. M. MCCOY, M. D.

The Hospital in Modern Society: By Arthur C. Bachmeyer, M. D., and Gerhard Hartman, Ph. D. New York, The Commonwealth Fund, 1943. Pp. 768. Price \$5.00.

This is a compilation of articles from the periodical literature in the hospital field, and in such allied fields as medicine, public health, management, and law, concerning the essence of hospital administration. The articles have been well selected and cover nearly all aspects of hospital administration. Conflicting opinions are given in the various articles which serve the useful purpose of stimulating thought and analysis. The bibliographic references are complete up to July 1943, but no articles subsequent to 1940 have been reproduced.

The book will be valuable for any one interested or concerned with hospital administration or hospital management. In this rapidly growing and challenging field this book serves a very useful purpose.

R. L. PULLEN, M. D.

A Textbook of Medicine: By American authors; Edited by R. L. Cecil, A. B., M. D., Sc. D., 6th Ed. Philadelphia, W. B. Saunders Co. 1943. Pp. 1566. Price \$9.50.

The sixth edition of Cecil's *Medicine*, well known to so many medical students, has now made its appearance. Extensive changes in text and reference lists have been made adding greatly to its value. New articles on diseases not previously covered have been contributed by well known authors. Thus a chapter on aviation medicine by Barach has been added to new chapters on *Hirudinea*, Contact Dermatitis, Air Sickness and Shock. A feature which is particularly appealing is a list by R. G. Stillman, of normal values for the commoner laboratory tests. With the great multiplicity of tests it becomes more and more difficult to keep normal values in mind.

One wonders how the publishers can produce

such a book for the price in these difficult days. The book can be wholeheartedly recommended.

V. DERBES, M. D.

PUBLICATIONS RECEIVED

American Medical Association, Chicago: Handbook of Nutrition, A Symposium, Prepared Under the Auspices of the Council of Foods and Nutrition of the American Medical Association, 1943.

J. B. Lippincott Company, Philadelphia: A Surgeon's World, by Max Thorek, M. D.

W. B. Saunders Company, Philadelphia and London: Gastro-enterology (in three volumes), Volume II, by Henry L. Bockus, M. D. Traumatic Injuries of Facial Bones, by John B. Erich, M. S., D. D. S., M. D. and Louie T. Austin, D. D. S., F. A. C. D. Minor Surgery, by Frederick Christopher, S. B., M. D., F. A. C. S.

Paul B. Hoeber, Inc., New York and London: Clinical Tropical Medicine, by twenty-seven authors, edited by Z. Taylor Bercovitz, M. D., Ph. D., F. A. C. P.

New Orleans Medical

and

Surgical Journal

Vol. 96

APRIL, 1944

No. 10

ACUTE PERICARDITIS DUE TO THE STREPTOCOCCUS VIRIDANS*

M. D. HARGROVE, M. D.
SHREVEPORT

Acute pericarditis is, with few exceptions, the result of secondary invasion of the pericardium from some other primary source. It occurs therefore as a complication or incident in some other disease, and has been found associated with various diseases. A rather wide variety of organisms have been the responsible agent but the *Streptococcus viridans* so rarely that such a case is worthy of reporting.

CASE REPORT

Mr. H. C., 16 years of age, was seen on September 25, 1942, complaining of a severe pain in the lower anterior portion of the chest, radiating backward between the shoulders and aggravated by respiration and moving. It was necessary to give him morphine for relief and he was moved to a small clinic in his home town. During the next four days he continued to be quite uncomfortable and had some fever. An x-ray of his chest made on September 26 showed some apparent cardiac enlargement and a second plate made on September 30 showed considerable enlargement of the heart shadow. He was then brought to Shreveport where I saw him on the evening of September 30. When seen he was quite uncomfortable, having some pain in the chest, and dyspnea.

His mother stated that he had had a rather severe cold for two or three days during the first part of September. Apparently he had recovered but about four or five days prior to the present illness was not quite well. He had previously been a normal, healthy boy, had had two mild attacks of influenza and bronchopneumonia as a small child. His father and mother were both living and well, 38 and 36 years of age, and he had one sister, 12 years of age, living and well.

*Presented at the South Central States Regional Meeting of the American College of Physicians in New Orleans, April 16-17, 1943.

On examination he appeared acutely ill, pale and somewhat cyanotic. He was well developed and nourished with no skin eruptions and no adenopathy. The pupils were equal and reacted to light and accommodation. The teeth were in good condition and the tonsils only slightly enlarged. The area of cardiac dullness was increased both to the left and right, the left border extending outside the midclavicular line. The rhythm was regular, at a rate of 100. The heart tones were good and there were no murmurs. The blood pressure was 120/80. The lungs showed no areas of dullness and the breath sounds were normal. The liver was palpable about 3 cm. below the costal border and quite tender. The remainder of the physical examination was essentially negative.

On fluoroscopic examination the cardiac shadow was enlarged to the right and left with rounding out of the borders and no visible pulsations. Pericardial paracentesis was performed, obtaining about 50 c. c. of turbid, straw colored fluid. Smears from the fluid showed a moderate number of leukocytes but no organisms. Culture was reported as positive on October 2, 1942 for the *Streptococcus viridans*.

An electrocardiogram made on October 1 showed an elevation of the ST segments in Leads I, II, IV, with inversion of T3. The changes were interpreted as indicative of acute pericarditis.

He remained in the hospital from September 30 to November 6, 1942, and was then removed to a convalescent home where he remained until December 8, 1942. During his stay in the hospital he ran a febrile course, the temperature varying from 98.6° to 102°, during the first ten days. On one occasion it reached 104.6° following transfusion of 500 c. c. of citrated blood. A characteristic paradoxical pulse was present, the rate varying from 80 to 120 and the respirations 20 to 30. During the next week the temperature varied from 98° to 100° and during the last week from 97° to 99°. On October 4, a pericardial friction rub was heard, which persisted for about four days. During this same period he developed a pleural rub in the left axilla which persisted for two or three days. On October 5 the pericardium was again aspirated, withdrawing about 50 c. c. of blood-tinged fluid, which on culture

showed the *Streptococcus viridans*. Blood cultures on September 30 and October 5 were reported as positive for the *Streptococcus viridans*.

During the second week he developed ascites and fluid in the right pleural cavity. For the first two weeks the blood pressure remained at about 120/80, then the systolic pressure gradually fell to 100 on October 19. At that time dyspnea was quite marked so that pericardial paracentesis was attempted but no fluid was obtained. On fluoroscopic examination the cardiac shadow was smaller, but no pulsations were visible and there was considerable fluid in the right pleural cavity which was aspirated on October 23, obtaining 1010 c. c. of straw-colored fluid with considerable relief from the dyspnea. Venous pressure, direct method, at that time was 24 cm. During the remainder of his stay in the hospital his condition improved, the dyspnea was less, the ascites decreasing, and the size of the cardiac shadow on fluoroscopic examination becoming appreciably smaller.

He was started on sulfanilamide on October 2, 80 grains every 24 hours and continued to October 5 with no effect on the temperature. He was then given sodium salicylate gr. 20 every four

hours for five days, then gr. 20 four times a day until October 19, with no apparent effect. On October 19 he was again given sulfanilamide gr. 20 every four hours for five days, then gr. 20 four times a day for one week, and then gradually reduced to gr. 10 three times a day on November 4. The sulfanilamide blood level on October 24 was 16.6 mg. per 100 c. c. and on October 31 was 15.4 mg. per 100 c. c. The other laboratory reports are shown in chart No. 1. He was given salyrgan on three occasions with fair diuresis.

CHART No. 1

Date	Red Cells	White Sed. Cells	Ven. Rate	Blood Pres.	Blood Cult.	Peric. Cult.
9/30	3,990,000	15,000				
10/4	3,580,000	16,850			Alpha Strept.	Alpha Strept.
10/12	4,320,000	17,450			Alpha Strept.	Alpha Strept.
10/22			24	110/60		
10/28			23	110/80		
11/4			21			
11/13	4,040,000	11,500	36	120/80		
11/24	4,040,000	9,250	17		Negt.	
12/3	4,220,000	11,950	45		Negt.	
12/5			15	130/80	Negt.	
1/11	5,330,000	7,800	10	8	Negt.	
2/15	5,620,000	13,050	10	7	124/80	Negt.
4/5	5,380,000	5,700	10	6	124/60	Negt.

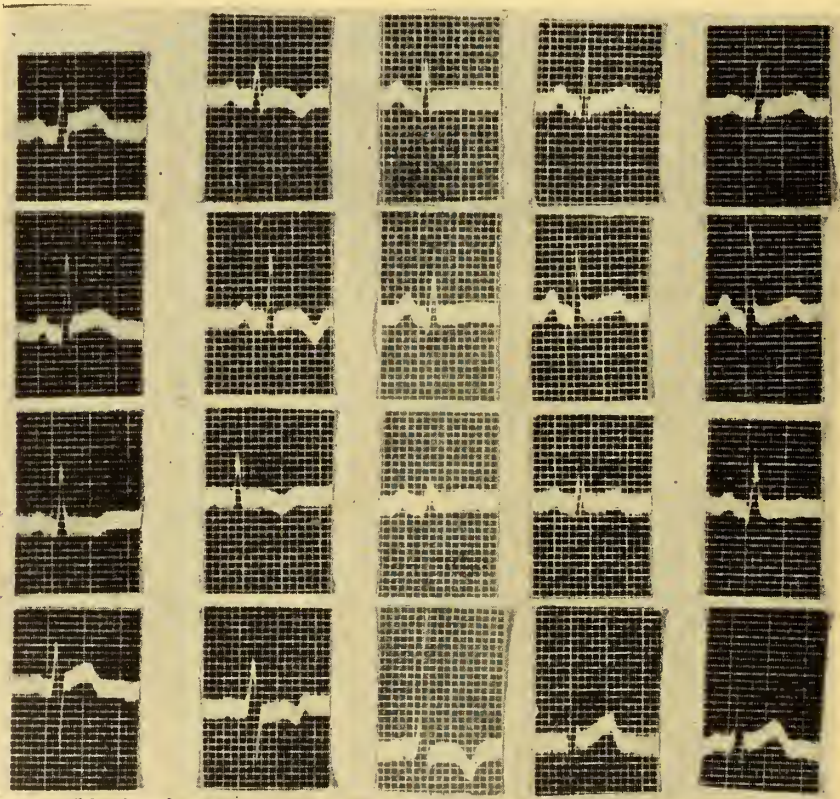


Fig. 1. Reading across the page are the four standard leads. Column 1, October 1—Elevation ST segments in leads 1-2 and 4F and diphasic T in lead 3. Column 2, October 19—Inversion of T in leads 1-2-3 and diphasic (minus plus) in T in lead 4F. Column 3, December 8—Isoelectric T in lead 1, slightly upright in leads 2 and 3 with small Q and an inverted T in lead 4F. Column 4, January 11 and April 5—Normal tracing.

He remained in a convalescent home from November 6 to December 8. During this time his temperature varied from $98\frac{3}{5}^{\circ}$ to $100\frac{3}{5}^{\circ}$, but on November 23 the temperature rose to 102° for three days. At that time there was a loud pleural friction rub on the left anteriorly and in the axillae. A pleural rub had previously been heard in the right and left axillae and anteriorly on occasions. Following this the temperature gradually returned to normal and remained there during his last week at the convalescent home. During this time the ascites, enlargement of the liver, dependent edema, and dyspnea gradually improved so that for the last two weeks he was free of these findings. He had continued to take sulfanilamide gr. 20 daily, vitamins and ferrous sulphate. Quinine had also been given at first, gr. 20 daily, then gr. 10 daily. He was sent home on December 10.

He returned for examination on January 11, February 15, and April 5. He had continued to improve, the temperature seldom reaching 99° F., and had gained 37 pounds, his weight on April 5 being 162 pounds. The heart was of normal size, the rhythm regular at a rate of 84, tones good, and the blood pressure 124/60 and the venous pressure 6 cm. Fluoroscopic examination showed the heart to be of normal size with vigorous pulsations. The laboratory findings are shown in Chart 1. It is to be noted that blood cultures have been consistently negative since November 24. Figure 1 shows a series of electrocardiograms from October 1, 1942 to April 5, 1943, showing charac-

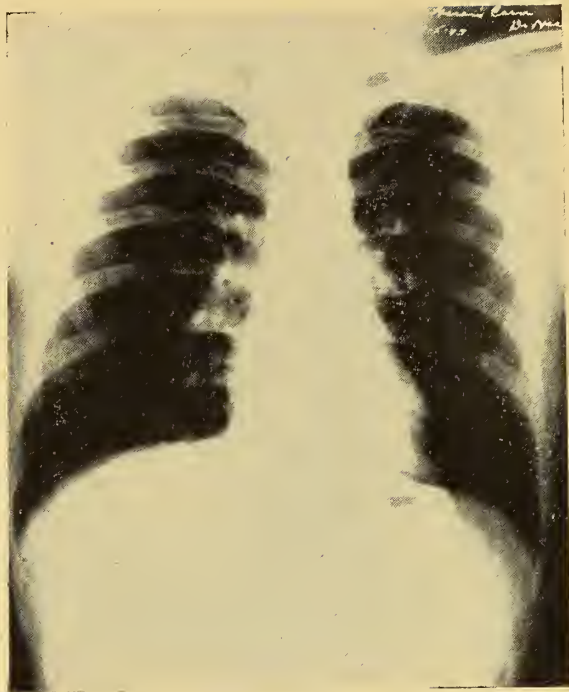


Fig. 3. Roentgenogram showing the return of heart shadow to normal.

teristic changes in the ST segments and T waves. Figs. 2 and 3 show x-ray of chest made on October 15, 1942 and April 5, 1943, the latter showing return of the heart shadow to normal.

COMMENTS

Following an upper respiratory infection this boy developed a *Streptococcus viridans* septicemia, complicated by an acute pericarditis which ran a stormy course. The *Streptococcus viridans* was found on culture on two occasions from the blood and pericardial fluid. Pericarditis due to this organism is rather infrequent. Carter,¹ quoting Thayer's figures, gives the incidence of *Streptococcus viridans* pericarditis occurring in the course of subacute bacterial endocarditis due to this agent as 2.7 per cent among 72 cases and 7.4 per cent among the 27 who came to autopsy. Preble, in 1901, according to White,² reported 244 cases of acute pericarditis, 4.7 per cent of which were due to sepsis, but the type of organism was not mentioned. Bigger³ reported eight cases of suppurative pericarditis operated upon, but none due to the *Streptococcus viridans*. Barnes and Burchill⁴ reported 14 cases of acute pericarditis

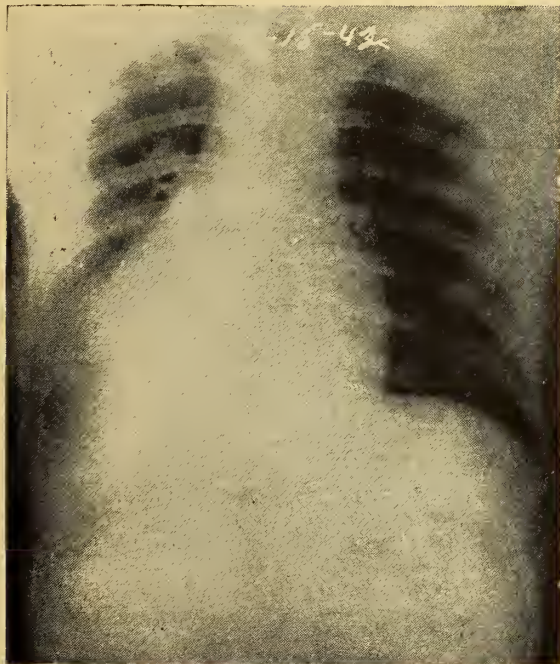


Fig. 2. Roentgenogram of October 15, 1942, showing marked increase in the size of the heart shadow.

simulating acute coronary occlusion. None of their patients were quite as sick as this boy, they were older and there was the question of coronary occlusion in the differential diagnosis. A preceding respiratory infection was noted in 57 per cent of their cases but no definite etiology was established though some type of streptococcus may have been the agent. Adams and Polderman⁵ reported 20 cases of suppurative pericarditis occurring at the Massachusetts General Hospital, during the past ten years, three of which were due to the *Streptococcus haemolyticus* but none to the *Streptococcus viridans*. Orgain and Poston⁶ reported a case of pericarditis due to the meningococcus. I reviewed the autopsy records of the Shreveport Charity Hospital and was able to find 20 cases of pericarditis from 1936 to 1943. The etiologic agent was: rheumatic infection, three; tuberculosis, six; pneumococcus, five; B. influenza, one; uremia, four; staphylococcus, one; streptococcus and staphylococcus, one; syphilitic, one; and undetermined, three.

This is a very incomplete review of the literature, but it at least indicates that acute pericarditis due to the *Streptococcus viridans* is a relatively rare disease. In this instance the disease ran a rather stormy course, so much so that the outcome was somewhat doubtful. Sulfanilamide was used though we realized that the *Streptococcus viridans* is not usually affected by the drug. We have been concerned about the possible development of adhesive pericarditis. Thus far the recovery has been excellent and perhaps we may dismiss this possibility.

The diagnosis of acute pericarditis is often difficult and is frequently missed largely because its symptoms are overshadowed by the primary disease. If pain, dyspnea, pericardial friction rub, and a rapid increase in the size of the heart are present the diagnosis is evident. Pain though is not a constant finding, in fact is a very variable finding, its absence being not unusual. Dyspnea may or may not be a prominent symptom and when present

may be due to complications as simple pleurisy or diaphragmatic pleurisy. A pericardial friction rub is probably present at some time in all cases, but may be absent at the time of examination. It should of course be listened for frequently. The area of cardiac dullness is increased markedly with large effusion but if the effusion is small or absent there may be no appreciable increase. Rapidly developing effusions or large effusions produce cardiac tamponade with increased venous pressure, venous distention, enlarged liver, and ascites. If these characteristic symptoms are present or develop during the course of some disease we should think of pericarditis at once.

There are three other procedures though, that are very helpful in making the diagnosis or focusing one's attention on the pericardium. They are the electrocardiogram, the x-ray and pericardial paracentesis.

The electrocardiogram often shows changes quite characteristic of acute pericarditis. A number of articles^{4, 7, 8} have appeared in the literature during the past seven or eight years on the electrocardiographic findings in acute pericarditis so that the changes expected are definite. Briefly they consist of an upward displacement of the RS-T segments in the standard leads which shortly diminishes or disappears altogether, and is followed by negative T waves. Frequently the T wave will be negative in all the standard leads, a finding in itself indicating pericarditis though it may be seen after acute coronary occlusion or after a second acute coronary occlusion. These changes are distinguished from those due to coronary occlusion, by an absence of Q and T patterns, absence of the reciprocal deviation of the S-T segments in Leads I and III, and the presence of R4. Aside from these differences the rapid return of the tracing toward normal is an important feature of pericarditis. The electrocardiographic changes are generally conceded to be due to subepicardial myocarditis.

It would seem wise to have electrocardiograms made during the course of infec-

tions, particularly septicemia, pneumonia, and osteomyelitis, or at least when there may be some suspicion of pericardial disease. Frequently the changes will be characteristic, establishing the diagnosis or at least inspiring additional investigation.

The x-ray is also quite helpful. A rapid increase in the heart shadow as occurred in this patient is always suggestive of pericardial effusion. If the larger shadow shows a rounding out of the borders, a foreshortening of the vascular shadow, a prevalence of T over L, and no or only slight pulmonary congestion one may be reasonably sure of the diagnosis. Fluoroscopic examination when possible has been more helpful since in addition to the above the degree of pulsation is evident. The absence of pulsation even without much enlargement is an important diagnostic point. Clinical improvement in this case in so far as the effusion was concerned coincided with the decrease in size and return of pulsations as noted on fluoroscopic examination.

Pericardial paracentesis should be performed in most patients in whom the diagnosis of pericardial effusion has been established or is in question. Carefully performed the procedure is not dangerous and should definitely establish the presence of an effusion and its type. Usually the responsible organism can be determined by smear, culture, or animal inoculation and the proper therapy instituted. Other than as a diagnostic procedure pericardial paracentesis should be performed only when cardiac tamponade is producing circulatory embarrassment.

SUMMARY

Report of a case of acute pericarditis due to the *Streptococcus viridans* which followed an upper respiratory infection.

2. A partial review of the literature indicates that this is a rare infection of the pericardium.

3. The use of the electrocardiogram, x-ray and pericardial paracentesis are commented upon.

BIBLIOGRAPHY

1. Carter, Edward P.: Glumer's Bedside Diagnosis, W. B. Saunders, Philadelphia, 1938, 2: 514-545.
2. White, Paul Dudley: Heart Disease, MacMillan Co., New York, 1932.
3. Bigger, I. A.: Suppurative pericarditis, with a report of eight cases treated surgically, South. M. J., 30: 164, 1937.
4. Barnes, Arlie R., and Burchell, Howard B.: Acute pericarditis simulating acute coronary occlusion, Am. Heart J., 23: 247, 1942.
5. Adams, Ralph, and Polderman, Hugh: Suppurative pericarditis, New England M. J., 225: 897, 1941.
6. Orgain, Edward S., and Poston, Mary A.: Pericarditis with effusion due to the meningococcus, Am. Heart J., 18: 368, 1939.
7. Vander Veer, Joseph B., and Norris, Robert: The electrocardiographic changes in acute pericarditis, Am. Heart J., 14: 31, 1937.
8. Schwab, Edward H., and Herrmann, George: Alterations of the electrocardiogram in diseases of the pericardium, Arch. Int. Med., 55: 917, 1935.

NEW AND IMPORTANT APPLICATIONS OF CARBON TETRACHLORIDE IN MEDICAL THERAPY*

GEO. F. FASTING, M. D.†

NEW ORLEANS

INTRODUCTORY

An apology is in order for not revealing in the title of this paper the diseases that may benefit by treatment with carbon tetrachloride.

There exists among many physicians a prejudice against this compound. The medical literature records a relatively small number of severe intoxications and a few fatalities. Yet, carbon tetrachloride is no worse offender to health than other potent solvents. As with other potent drugs, carbon tetrachloride should not suffer the fate of disuse because of inadequate studies and prejudices.

My attainment of satisfactory therapeutic responses without unpleasant reactions justifies the presentation of results.

The underlying principles that determine the action of carbon tetrachloride on various biological systems, may lead to the discovery of more efficacious procedures of therapy in certain ailments and to the finding of superior drugs.

I have maintained a reluctance in publish-

*Read before the Orleans Parish Medical Society, New Orleans, October 11, 1943,

†From the Department of Pathology, Charity Hospital of Louisiana at New Orleans.

ing the newer uses of carbon tetrachloride because lay persons may readily proceed to unrestrained medication. On the other hand, there is an urgent need for certain simple emergency remedies among all branches of the armed forces. Carbon tetrachloride is a drug that may, in part, fill this need.

Carbon tetrachloride is one of the more important solvents in the chemical industry. As a solvent of fats and plastics, it mixes readily with various inflammable solvents, rendering the mixture non-inflammable and non-explosive.

Modern dry-cleaning establishments use carbon tetrachloride as the principal cleaner. It is, however, only a smaller constituent of household dry-cleaning fluids.

Of particular interest is the utilization of carbon tetrachloride in certain types of fire extinguishers.

Toxic manifestation from carbon tetrachloride, involving a few fatalities, have been reported. It appears established that chronic inhalations of considerable concentrations are required.^{1, 2} Sudden acute intoxications have been few and readily accounted for.^{3, 4} With installation of closed systems for handling the fluid and forced ventilation against the fumes, the dangers are eliminated.

As a causative factor in contact dermatitis the incidence appears low in comparison with other solvents.⁵ This is in part borne out by its former use as a dry method of hair shampoo.

The discovery of anthelmintic effect, particularly against hookworms, led to its acceptance as an official drug in the United States Pharmacopeia. This property is shared with the less toxic tetrachlorethylene and hexachlorethane. A mixture of gasoline and carbon tetrachloride has been suggested as a remover of adhesive, primarily to avoid the hazard of inflammable ether and benzene.⁶

An additional use of carbon tetrachloride was reported in 1942, as an anti-pruritic remedy against red-bug or chigger bites.⁷

APPLICATION TO DERMATOPHYTOSIS

A new and important use of carbon tetrachloride was the discovery that the solution is an efficacious remedy in the treatment of dermatophytosis. Clinical experiments since 1930 had indicated that benzene and gasoline alone were effective in curing trichophyton infections. Assuming that the therapeutic values resided in the fat solvent action, search for an available non-inflammable agent of low cost led to the trial of carbon tetrachloride.

The choice revealed further advantages. The solution could be applied to open sores and fissures which complicated the fungal infection; local pain was relieved promptly, and an area threatened with secondary infection was brought under control.

With the object of enhancing and prolonging the efficacy of carbon tetrachloride, a formula was evolved to include a small amount of gasoline, a fungicide like copper in the oleate form, and thymol to represent the volatile oils.

The results reported here concern carbon tetrachloride alone. The trichophyton infected areas have involved all sections of body surface. Some patients had received the limit of x-ray therapy, others faced surgical avulsion of nails. A few patients have been physicians who despaired at results of conventional therapy. Others had been unsuccessfully treated by dermatologists. Bacteriological cultures were not employed.

The solution is preferably applied topically with a cotton or gauze sponge. Gentle frottage is incorporated, as if one were "dry cleaning" a grease spot on clothing.

Two or three minutes only are spent over an area involving the toes of one foot. Immersion of suitable body parts are only suggested for larger pathologic areas and a maximum time limit for immersion set to one minute.

Twice daily treatments are suggested for the first week. Henceforth a daily treatment is maintained for three weeks, and, if warranted, continued as a hygienic measure to offset reinfection.

Preliminary cleansing with soap and water is discouraged. The adopted dry-cleaning procedure will more effectively remove dirt and debris, and infectious hazards are decreased. Contaminated sponges and tissue paper are readily collected in paper bags for disposal. It follows as a sanitary measure, that less pollution of floors, bath tubs, and towels may be expected.

No ointments are applied. Dressings are rarely needed. Minor ulcers and fissures are adequately "desiccated" in a first treatment with carbon tetrachloride, leaving a condition adequately cared for by suitable dusting powder.

The simplicity and convenience of the carbon tetrachloride procedure renders the patient cooperative to continue the very essential prophylaxis against future reinfection or recurrence. The prompt control of signs of possible recurrence by the use of carbon tetrachloride, or the compound formula, contributes appreciably to the desire to use this procedure.

In ringworm infection of toe and finger nails, it has been possible to avoid surgical avulsion. Incipient perionychia yields to the same treatment. Application of the solution is continued until full length of new nail has taken place.

APPLICATION TO BURNS

A second and new use of carbon tetrachloride is as a remedy for all degrees of burns of smaller dimensions.

The application of carbon tetrachloride to a human burn has been followed by almost immediate subsidence of the pain. At no time has there been a subsequent return of the pain when initial treatment involved a 15 to 20 minute contact with the solution.

When the solution was applied within a few minutes of the accident, vesication was either totally prevented or materially minimized. In some instances the results in 24 hours gave little evidence that a severe burn stimulus had been present.

The application of carbon tetrachloride to the human corium, which became ex-

posed at variable periods of time following a heat burn, has led to immediate cessation of serum oozing.

The phenomenon has not been accompanied by any evident tissue coagulation as by tannic acid, astringents, or styptics.

What might be interpreted as a pliable covering, permitted visualization of underlying structures. In no instance has a pyogenic infection developed in the areas that received the solution. The strange results obtained in the first few cases with carbon tetrachloride alone were corroborated subsequently when one-half per cent butesin was incorporated in the solvent.

Clinical material at a local industrial plant was made available. The majority of the burns here resulted from hot asphalt and tar, ranging in temperature from 250° to 450° Fahrenheit. (The adherence of asphalt to the skin is an indication in itself of a temperature sufficient to create a burn.) The latent heat of the product prolongs the exposure to the heat stimulus and may suggest the degree of burn.

The services of a 24-hour medical dispensary at the plant made possible the administration of treatment within a few minutes, and effectively to observe the patients at daily or hourly intervals.

It is pertinent to the problem of toxicity of carbon tetrachloride to indicate that this industrial plant has for several years employed carbon tetrachloride as the only efficacious and safe solvent for the removal of asphalt in burns. The immersion of body parts in the solution for as much as 40 minutes has been necessary and has not given rise to toxic manifestations or complications.

The burns from asphalt at this plant have involved toes, instep, legs, hands, forearms and the face. A few burns from scalding steam and hot pipes have been studied elsewhere. The initial treatment by contact application with tetrachloride alone, or in combination with one-half per cent butesin, produced an immediate effect suggesting subsequent open-air treatment, if feasible. This was modified to consist of a dusting powder, containing a small amount of zinc

stearate and boric acid over which a very light gauze dressing was applied. Vesicles that were evident on the next day's examination received a contact application with carbon tetrachloride for three minutes. The vesicles were then lanced, drained and the epidermis allowed to collapse on the corium. This epidermis remained attached when the "dry" dressings were continued. When an ointment was applied the epidermis softened and became readily detached in a few days.

It is suggested that a burn presenting itself with vesicles within a few hours of the accident, should receive the 20 minute contact application of carbon tetrachloride, have the vesicles lanced, the epidermis collapsed back, and then receive a contact application with carbon tetrachloride for a few additional minutes before applying the dusting powder.

The injection of carbon tetrachloride into a vesicle has been contemplated and might be used to check the corium from further oozing of serum. But where subsequent accidental trauma may lead to rupture of the vesicle, the initial procedure affects a similar arrest and is probably more desirable. More than two treatments with carbon tetrachloride, or its combination, have not been necessary, except that carbon tetrachloride has been used to clean off the burn areas and fresh dusting powder applied on subsequent examinations. Three burns on the face with freshly exposed corium have been treated without dressings, leaving no disfigurement and relatively "healed" within four days.

The prompt relief of pain, the avoidance of secondary infection, and use of minimal dressings facilitated the patient's return to work with little loss of time.

When the burn injuries were confined to the hands and forearms, a prompt functional capacity was restored.

The entire healing process suggested a substantial reduction in time. Scarring or exfoliation of epidermis has not taken place, nor has any evidence of keloid formation been present.

None of the burns treated to date re-

quired debridement. The reactions of the carbon tetrachloride on granulating tissue filling a burn cavity have not been studied, but separate evidence on venereal sores indicates a temporary arrest of serum and leukocyte flow to the surface.

APPLICATION TO OTHER DERMATITES

The anodyne effect and the apparent disinfectant powder of carbon tetrachloride suggested its trial in other skin conditions. Two cases of herpes zoster over the groin received prompt relief of pain, and the vesicles underwent rapid involution. The "dry-cleaning" method was applied successfully to two cases of multiple furunculosis of the armpits; to two cases of "sycosis barbae"; to a case of staphylococcal pyoderma covering the buttock and sacrum. In a case of impetigo of the forearm the contact application of carbon tetrachloride permitted the removal of the crust better than with hydrogen peroxide. Claim to hastened healing in this case was not warranted. In a case of tinea cruris, resembling the imprint of a Texas saddle, extensive folliculitis over the buttock subsided with the ringworm therapy.

COMMENT

The rationale of the several medical applications to which carbon tetrachloride has been put is not readily explained. We know little of the role of lipoids, fats and waxes in animal metabolism, and nothing of the role of fat solvents in biological systems,⁸ yet, it may be possible to appraise a mode of action.

Carbon tetrachloride and two chlorinated hydrocarbons, tetra-chlorethylene and hexachlorethane possess anthelmintic properties. The ingestion of fats along with the above substances enhances toxic effects for reasons unknown.

The related chloroform, where one chlorine atom is replaced by one hydrogen, vesicates the skin, whereas carbon tetrachloride does not. Both compounds possess similar general anesthetic effects. Liver damage is similar but varies in intensity.

The prompt analgesic effect, obtained under conditions of a heat burn, may indi-

cate a vital degree of penetration of carbon tetrachloride into dermal structures; and a possible important action on peripheral nerve endings of various types. The relief of pain raises the question: Is it pertinent or indifferent to the problem of heat burns, whether pain perception is blocked in the brain by morphine or blocked at the site of injury by different local anesthetics?

A possible answer may be provided by sequence of events in burns treated with carbon tetrachloride.

The prevention of vesicles, after thermal stimuli that experience indicates should raise a vesicle, may reside in the arrest of protopathic impulses and the prevention of reflex phenomena to the site of the burn.

The absence of edema and the prompt restoration of functional capacity, when burns occurred on hands and forearms, have suggested a parallel effect to the injection of novocain in ankle sprains.

A beneficial interference with non-nervous tissue is suggested by the arrest of serum oozing from exposed corium. No explanation can be offered now for the transparent semi-dry "coating" that is formed. The speed of healing with absence of exfoliation suggests a minimum of local lethal effects to the epithelial cells.

The relative state of dryness initiated by carbon tetrachloride suggested the adoption of "open-air" after treatment when feasible. A satisfactory and necessary substitute proved to be the use of a dusting powder and light dressing. The use of ointments resulted in a state of moist surfaces, and caused the epidermis from collapsed vesicles to float off after a couple of days.

The contrast of the two procedures justifies a meticulous inquiry as to the actual harm that may result from the paraffin molecules coating granulation tissues and exposed corium. The interference with surface respiration and the accumulation of sweat at the interphase are conducive to a disturbed local physiology and to infection in spite of antiseptic medication in the ointment.⁹

Inferences from smaller burns have in

the past been difficult to carry over to larger burns. The use of carbon tetrachloride within minutes of a burn, sets in motion physiologic forces that hitherto have been poorly and belatedly dealt with. Only clinical trials can determine the effectiveness of carbon tetrachloride as a first-aid in a large burn and its part in the permanent subsequent therapy.

The results obtained in dermatophytosis, while less dramatic than those in burns, assume significance by attempting to explain the fundamental principles involved.

Fat solvents are used in the dry-cleaning industry principally to remove dirt. Publications on its relationship to bacteriology are exceedingly scant.

Ether and benzene are casually used to remove grease from the skin, preliminary to thorough scrubbing in surgery. That these fat solvents are independently capable of potent fungicidal and bactericidal property is not part of our conscious thoughts. Nor is this concept mentioned in any textbook on bacteriology or in separate treatise on disinfection and sterilization.

Paradoxically, biochemistry furnishes interesting information. The addition of chloroform in pepsin digestion experiments on meat; the addition of toluol or xylol or chloroform to a 24-hour urine specimen for analysis, and again, the pharmacist's addition of chloroform to percolating herbs, are illustrations of bacteriostatic action by the vapor phases of the respective fat solvents.

Simple experiments *in vitro* will illustrate the lethal and static effects of carbon tetrachloride and other solvents, by their vapor or liquid phase. That a lipoidal fraction participates as a protection of bacteria and plant cells is suggested by certain extraction procedures.

The application of a fat solvent in dermatophytosis and sundry skin infections involves in principle an attack upon the lipoidal and fatty barrier in the skin itself and a simultaneous attack on the lipoids of the fungi.

The conventional forms of treatment ignore largely this "fatty" barrier. They depend on keratolytic power, penetration

of dyes and alcoholic medicaments. To the extent that ether or benzene are used as preliminary cleaning agents, it becomes evident that in scientific analysis these fat solvents should be credited with a share of results.

The history of *materia medica* suggests the existence of two peculiar "blind" spots in medical science and progress. One, a "lag" period before certain vital discoveries find application. This may be illustrated by penicillin and the sulpha drugs. The second is an insidious and destructive psychology to drugs and compounds that have been found "potent" in small amounts. Ephedrine is typical in this respect; and it is shared by strophanthin, quinidine, prostigmine, pituitrin and adrenalin.

Carbon tetrachloride appears to be under a spell of a toxicity complex.¹⁰ Yet, the equally potent bone marrow poison "benzene" continues to find authoritative sanction for skin use. The related compound chloroform, which can vesicate the skin and produce similar liver necrosis, remains an anesthetic of choice (or necessity), under combat conditions in the tropics.

Admitting the probability of abuse of carbon tetrachloride by the public, the application of the newer knowledge is justified by conditions of urgency as they develop among our armed forces, and, secondly, as a stimulus to further research.

CONCLUSIONS

1. Carbon tetrachloride alone is an efficacious drug in the treatment of dermatophytosis. Its effectiveness appears enhanced by incorporating appropriate volatile oils and metals in combination with an oleate.

2. Carbon tetrachloride is an efficacious remedy for the treatment of smaller heat burns. In combination with an appropriate local anesthetic, it profoundly modifies and hastens the process of healing.

3. A single application of carbon tetrachloride to exposed corium promptly arrests serum oozing without causing evident necrosis or coagulation.

4. Carbon tetrachloride applied promptly to severe small burns has immediately relieved all pain, and prevented subsequent development of vesicles.

5. The accessibility of carbon tetrachloride in fire extinguishers makes possible an effective first-aid treatment in heat burns.

6. Under certain pathologic conditions, carbon tetrachloride exhibits properties of antiseptics and disinfectants. This property, which is shared by other fat solvents, deserves recognition in our theoretical concepts of disinfection and sterilization.

REFERENCES

1. Davis, P. A.: Carbon tetrachloride as an industrial hazard, *J. A. M. A.*, 103:962, 1934.
2. Elkins, H. B.: Maximal allowable concentrations I—carbon tetrachloride, *J. Ind. Hyg. & Tox.*, 24:233, 1942.
3. Smetana, H.: Nephrosis due to carbon tetrachloride, *Arch. Ind. Med.*, 63:760, 1939.
4. Corcoran, A. C., Taylor, R. D., and Page, I. H.: Acute toxic nephrosis. (A case of carbon tetrachloride poisoning), *J. A. M. A.*, 123:81, 1943.
5. Lane, C. Gay: Occupational dermatosis, *J. A. M. A.*, 3:1521, 1938.
6. Current Comment, *J. A. M. A.*
7. Fasting, G. F.: Chigger infestation, *J. A. M. A.*, 119:536, 1942.
8. Engman, M. F., and Kooyman, D. J.: Lipids of the skin surface, *Arch. Dermat. & Syph.*, 29:12, 1934.
9. Fisher, C. V., Accousti, N. J., and Thompson, M. R.: Bacterial contaminations in sulphonamide ointments, *J. A. M. A.*, 122:855, 1943.
10. Hamilton, A.: The toxicity of chlorinated hydrocarbons, *Yale J. Biol. & Med.*, 15:787, 1943.

DISCUSSION

Dr. Clyde Brooks (New Orleans): It would not be profitable for me at this point to enter into the discussion of the mode of action of carbon tetrachloride for the treatment of burns and dermatophytoses. All I wish to do is to open the discussion.

I have seen several cases of burns which have been treated by carbon tetrachloride. I have used it on myself to treat a burn that occurred on my hand. It was quite a painful burn, but not very deep. As soon as I put on the carbon tetrachloride, it eased the pain. I took it off and the pain returned. Several times this was repeated. Finally the pain did not return. I did not put any dressing on it. I expected the burn to form a blister; but it did not. It healed without a blister, and it was very slow about peeling. I have seen other burns treated in which the surface of the arm was burned, a superficial burn but quite severe. After putting on carbon tetrachloride the surface appeared to be dry and not oozing. The application of carbon tetrachloride

itself eases the pain, and it does tend to produce a dry surface and to prevent blisters.

I do not think we expect the treatment of a burn to cure the burn. All we expect is for it not to interfere with the healing process. If it does that it has served its major purpose. It seems to me that is what carbon tetrachloride tends to do.

How many times should you apply the carbon tetrachloride to a burn—just once every hour? What else should you do for these burns? Dr. Fasting has suggested that the ideal treatment of a superficial burn is open air. Anything put on in the way of an ointment or powder, is going to interfere with the healing.

Here is Parker's way of treating burns: Strap it with adhesive and let it stay indefinitely. When the adhesive is removed the burn is healed. I have heard of a New Orleans surgeon who dresses burns with patches of adhesive. Just last week there was an article in the *J. A. M. A.* in which two Boston surgeons wrote about treating burns by putting on plaster casts. They did not cleanse the burns. They merely clipped off pieces of hanging skin, put on a layer of gauze with petrolatum, fitting it nicely around the fingers, and then a nicely fitting plaster cast, which was left on fourteen days. Then they took off the cast and if the wound was not healed they reapplied it.

I suggest that you try carbon tetrachloride and that you follow that up by putting on a plaster cast. That will possibly complete the treatment. I regard Dr. Fasting's treatment as incomplete. Putting on carbon tetrachloride is not enough. If you can combine carbon tetrachloride with the idea that Dr. Parker used, putting on adhesive, or putting on a plaster cast, you may get a more perfect treatment for burns.

I think we are very much indebted to Dr. Fasting for his stimulating paper.

Dr. D. D. Baker (New Orleans): I have had the opportunity of using carbon tetrachloride with anesthesin and butesin in the treatment of burns. The first striking thing that is noticed is that the pain is almost instantly relieved and seldom recurs. Second, there is usually no blister formation if the burn is treated early enough. By early enough I mean within the first half hour.

I have seen burns from a blow torch which probably would have been rather bad under the usual treatment. These blow torch burns that probably would have produced large blisters and did show marked discoloration caused no blister after carbon tetrachloride treatment.

Carbon tetrachloride is toxic and should be used in a room where there is plenty of ventilation. The vapor is heavy and will fall to the floor. If the

room in which the treatment is given is small, a fan should be used to carry the vapor outside.

A dressing is frequently necessary for the protection even though a blister does not occur. This is true especially of an individual with a burn of the volar surfaces of the hands and fingers. It is well to cover the burned regions with an antiseptic powder. I use sulfanilamide powder routinely.

I have not had a chance to use this treatment on large burned regions. Most of my cases have been small burns of the forearm, hand and fingers.

Dr. Fasting (in closing): I realize the difficulty of incorporating details in this paper with a time limit of fifteen minutes. Case reports have purposely been omitted.

Data on 33 minor cases have been collected to date.* While they are not many, it is well to realize that even at a Charity Hospital this type of clinical material does not frequently present itself.

It is hoped that the reading of the publication will produce an attitude favorable to testing extensively the principles involved. The remedy for burns suggested primarily as a first aid treatment in burns is admittedly an innovation. It is well to remember that no efficacious home remedy for burns is known.

The student of medicine is inadequately being taught and impressed with the factor of time in relation to the display of biological phenomena. The absence of vesicle formation suggests the question: Does the prompt application of carbon tetrachloride to burns set in motion or arrest known and unknown physiologic powers? Small burns happen to one's self and one's immediate family often enough and should be observed more closely than hitherto has been the custom. A greater inquisitiveness about the control of forces involved in small burns may after all prove helpful to the problem of large burns. I like to hope that I have contributed in that direction.

If humor is permissible here, allow a last suggestion. Place four or eight ounces of carbon tetrachloride in your bathroom cabinet. Try it for chigger bites after a summer day in the woods or fields. Assuming a fair percentage of physicians to be afflicted with "athlete's foot"—try the remedy when an exacerbation of the ringworm is particularly annoying. The contents may prove useful as a fire extinguisher. It is the dry cleaning agent of choice for gravy spots on ties and vests. Above all make sure there is always some fluid left when accidents cause small burns to members of the family.

*Subsequent to the reading of this paper, more than one hundred burn cases have been treated in industrial plants. All cases have responded as previously described.

ACUTE VENTRICULAR FAILURE

HARRY EVAN ROLLINGS, M. D.
NEW ORLEANS

To avoid confusion about the subject to be discussed, and to dissipate clashes with various classifications concerning this condition, I should like at the outset to limit this paper to a consideration of acute, congestive heart failure about which the early authorities wrote and which is meant in the great majority of cases when we use the unqualified expression "acute heart failure." I shall attempt to emphasize a few important points about the causes, manifestations, diagnosis and treatment of such heart failure.

The development of myocardial failure may be quite rapid. Though usually slow and insidious, it is recognizable if searched for in the early and often overlooked stages. Unlike the anginal type of failure, this type of failure is never instantaneous. Cardiac enlargement of clinically discernible proportions always precedes such failure and serves as a valuable differential point in that edema and dyspnea, occurring with a heart of normal size, must be ascribed to other causes of congestion than heart muscle failure. The heart muscle may fail first on the left side, or it may begin on the right side; or, more rarely, it may occur on both sides of the heart simultaneously.

The etiologic factors in myocardial failure can best be considered by dividing them into what may be called primary and secondary factors. While one or a few factors usually predominate, the cause may rarely be unknown, or more frequently, unrecognized or multiple.

Drs. Boyer, Leath, and White analyzed, in 1940, the primary and secondary factors responsible for congestive heart failure in 1000 cases, 500 from the wards at the Massachusetts General Hospital and 500 seen in private practice. In their presentation they recognize that their experience will differ somewhat from that of others who live where rheumatic fever is less prevalent and syphilis and anemia more common, or from that of pediatricians where

the rheumatic group comprise almost the entirety. In their study, hypertension as an underlying strain, with or without coronary heart disease, topped the list with a total of 47 per cent; rheumatic heart disease was second with 26 per cent; and uncomplicated coronary heart disease—that is, uncomplicated except by myocardial infarction—was third with 16 per cent. No other factor was responsible for as much as 5 per cent. Syphilis, for instance, accounted for but 3 per cent; cor pulmonale, for 2 per cent; and congenital defects, for only 1 per cent. The remaining 4 per cent were ascribed to unknown causes. Males outnumbered females about two to one in the entire group of 1000 cases.

Of even more interest were their findings with respect to precipitating factors superimposed on the underlying causes to set off the failure. Auricular fibrillation led the list of the recognizable complications, being clearly responsible for 14 per cent, doubtless due to the associated tachycardia. Coronary thrombosis, to their surprise, was second, being the exciting factor in 13 per cent. Respiratory infections were third with 11 per cent. Rheumatic fever was the obvious cause in 7 per cent. Pulmonary infarction was the factor in 3 per cent; malignant hypertension, in 2 per cent; exertion, in only 1.5 per cent; anemia, in 1 per cent; and, thyrotoxicosis, in but 0.7 per cent. In a large group of 38 per cent, the onset was very gradual with ill-defined or no precipitating factor, quite likely some very minor strain setting off the failure in the case of the myocardium, whose reserve was nil; in 5 per cent, the onset was very sudden, due also to unknown precipitating factor. In only five cases of the thousand could a surgical operation be blamed for the failure. Pregnancy was the precipitating factor in two patients. Trauma was responsible in two; and excessive ingestion of fluid, in one.

The value of discovering the precipitating factor is obvious and incontestable since these observers found that when failure is precipitated by a removable or controllable cause—such as auricular fi-

brillation, respiratory infection, exertion and thyrotoxicosis—the patient has roughly a fifty-fifty chance of regaining some degree of compensation. This is also true of those patients in whom failure occurred suddenly with no assignable cause, and it seems likely that here, too, some temporary factor was at work. The prognosis they found depended much more on the exciting than on the underlying causes or on the age of the patient, except that those over seventy did poorly. A poor prognosis was always associated with marked cardiac enlargement, regardless of cause. Hypertension, when present, increased the incidence of decompensation in patients with myocardial infarction.

In evaluating the individual case, one must assemble all those particular underlying and precipitating factors specifically presented by that case, weigh their importance in their association with the actual structural and organic changes involved and realize the prognostic significance of the exciting cause. To illustrate the extremes: We may consider the rapid failure and death engendered by extensive myocardial infarction complicating hypertensive heart disease; then compare this to a mild rheumatic heart disease withstanding repeated respiratory infection, with little or no evidence of strain. Most cases, however, fall in the middle ground, and all degrees of cardiac failure or enlargement result from corresponding degrees of strain. However, one heart may sustain, without failing, stresses to which another heart may completely succumb.

The signs and symptoms of myocardial failure may best be presented in relation to their mode of development. The great majority of cases of myocardial strain have stress exerted upon the left ventricle. Systemic hypertension, disease of the aortic valve and myocardial infarction first manifest failing response in left ventricular enlargement. When this condition becomes serious enough to permit congestion of the pulmonary vessels, the first symptom appears, consisting of breathlessness on effort or activity which had previously been car-

ried on without breathlessness and for which other explanations do not exist, that is, in the absence of bronchial disease.

I do not intend to suggest that ventricular enlargement and breathlessness occur simultaneously, or even synchronously, since such could hardly be the case. Though ventricular enlargement may precede the symptom of dyspnea by only minutes in the case of a fulminating large myocardial infarction, more frequently the interval is much longer—even extending to years, as in the instance of slowly progressive hypertension or in aortic stenosis. However, as White emphasizes, enlargement must always be present due to dilatation, or to dilatation and hypertrophy, before dyspnea can justifiably be blamed on heart failure. In fact, the extra-cardiac causes of dyspnea exceed in number the cardiac; and, actually, the mere presence of cardiac disease co-existent with dyspnea need not imply that the latter is a result of cardiac failure. The picture is complicated further by the fact that respiratory disease may precipitate heart failure, especially when heart disease is already present. Specificity of importance in etiology of dyspnea in such a circumstance would require considerable skill and care. The use of venous pressure determination and estimation of the circulation time is simple and of great importance in doubtful cases—the former, of course, only being altered when the right ventricle is affected.

Vieussens, more than two hundred years ago, called attention to the necessity of differentiating the dyspnea resulting from mitral stenosis from that due to left ventricular strain, since they differ in pathogenesis, prognosis, and treatment. As he showed, the dyspnea in mitral stenosis is not to be attributed to heart muscle failure—though it often leads to it, but then of the right ventricle and not of the left. A patient with mitral stenosis may be doing quite well for years, then suddenly become dyspneic as a result of onset of auricular fibrillation developing so frequently to complicate mitral stenosis.

In such case, it is the tachycardia de-

creasing the effective work of the heart which congests the lungs with blood and increases pressure in the pulmonary artery to such an extent that the right ventricle frequently begins to fail. In realizing the principle of causation of dyspnea here, the error of ascribing such dyspnea to failure of the myocardium is obvious, and the fact that failure does so frequently eventuate explains why this error is so often made. True enough, the heart is at fault in causing the dyspnea, but it is at fault because the myocardium *per se* is at fault. The multiplicity of action of digitalis prevents great harm resulting from such an error because as the drug *par excellence* for congestive heart failure it also helps tremendously in these cases by producing heart block, reducing the heart rate, and so relieving the pressure in the pulmonary circulation and relieving the strain on the right ventricle.

The emphysema and "cardiac asthma" seen in cardiac patients may be traced to the breathlessness on effort mentioned as the primary symptom, which, without treatment, usually tends to increase in severity until it is present even at rest, passing through stages of added intensity until emphysema develops in a futile attempt at compensation; and, as Hope described, "cardiac asthma" appears as a super-added reflex phenomena in some but by no means all cases of left ventricular failure. The raising of copious quantities of blood even in the most acute cases almost invariably can be credited to pulmonary infarction or infection; small amounts of blood, usually consisting of slight "streaking," may occur simply from acute pulmonary congestion, however.

The fact that breathlessness antedates the appearance of physical signs of heart disease (other than cardiac enlargement) makes its evaluation doubly important. When the physical signs do appear, much valuable time has been lost in waiting as the condition is less responsive to therapy. White lists accentuation of the pulmonary second sound, in hypertensives often equaling or surpassing the already accentuated

aortic second sound, diminution of the first sound, and protodiastolic gallop rhythm at the apex (a gallop seen or felt even better than heard.) Mitral valve dilatation or physical insufficiency may produce a mitral systolic murmur. It is interesting to note that old murmurs, especially that of aortic stenosis, may be diminished markedly. Pulsus alternans is fairly common in left ventricular strain and can be shown readily by auscultating the brachial artery with the blood pressure cuff at slightly below the systolic pressure, then lowering the pressure until the alternate beats appear.

Fluoroscopic examination aids greatly not only in accurately determining the size of the heart, but is productive of more specific finding in the later stages showing dilatation of the pulmonary artery and its branches and severe degrees of pulmonary edema. The important complication of pulmonary infarction may be revealed, though this is more frequently an accompaniment of right heart failure. Incidentally, as Paul White states, rales at the lung bases are an advanced sign of pulmonary edema and are much more often due to pulmonary infection, to unilateral or bilateral infarction, or even to atelectasis.

Cyanosis is a sign of little value in determining which side of the heart is failing; since, though it occurs with marked left ventricular failure, it occurs also in right ventricular failure, due to stasis. In fact, it may occur in simple mitral stenosis in the absence of myocardial failure, due to pulmonary congestion. A defect in the local pulmonary circulation with resultant local venous stasis can also be responsible for cyanosis. We must remember that congestive heart failure, except in its terminal stages, may be present with no cyanosis at all.

Failure of the right ventricle may occur primarily as a result of mitral stenosis or pulmonary vascular disease in the absence of left ventricular failure, but most often the right ventricle fails as part of a cycle of failure inaugurated by failure of the left ventricle. The first sign to be sought for in detecting right ventricular failure is en-

gorgement of the liver. A great deal of hepatic engorgement can occur before appreciable elevation of venous pressure is produced, even when manometric determinations are made, much less to the gross evidence of distention of the neck veins. White and Boyer have found, for example, that "a very early symptom of right ventricular insufficiency in mitral stenosis is right upper quadrant abdominal pain on effort, due doubtless to acute hepatic engorgement, comparable to the acute pulmonary engorgement which causes dyspnea on effort relatively early in the case of left ventricular insufficiency."

The liver, rather than the systemic veins, quite naturally bears the brunt of right ventricular failure because of the low pressure in both the portal and hepatic circulations, because of the effect of gravity and because of the angularity of the entrance of the hepatic veins into the inferior vena cava. A condition of acute or subacute engorgement of the liver may commonly last for as long as several weeks and, as such, can be readily recognized by the discovery of hepatic enlargement or right upper quadrant tenderness co-existent with severe rheumatic carditis in childhood or in any patient with serious stress of the right ventricle. Such a condition may go on to a permanent or constant state of congestion lasting for years, or it may subside entirely. Mitral stenosis and constrictive pericarditis are the conditions in which such chronic enlargement most often occurs, and this often eventuates in the picture of what is justifiably called cardiac cirrhosis, differentiated—often with difficulty—from Laennec's cirrhosis. It has been theorized that an hepatic involvement consisting of acute rheumatic hepatitis exists, but the whole picture can be satisfactorily explained without this unproved conception.

Any evaluation of the liver in relation to heart failure must consider several manifestations other than mere alteration in size and consistency. It has been previously thought that active liver pulsation indicated stenosis of the tricuspid valve, but it

has been definitely shown that such is not the case necessarily. Of course, tricuspid valve disease with regurgitation may be accompanied by pulsation of the liver; but, when such pulsation is vigorous, it must be due to tricuspid regurgitation, whether or not the valve itself is primarily diseased. In fact, even following recovery from congestive heart failure, an irreversible dilatation of the tricuspid ring, with little or no valvular deformity, may persist, particularly in cases of severe mitral stenosis. Such a situation is evidenced by strong systolic pulsation of the jugular veins. As MacKenzie has shown, the liver may pulsate even in the presence of cardiac arrhythmia; although in the presence of the most likely arrhythmia—namely, auricular fibrillation—the liver pulsation is a single wave, or as he called it, the ventricular type of wave. There is little doubt that in many cases the liver pulsates, but so weakly that it cannot be often recognized.

The appearance of jaundice in a patient with the picture of congestive heart failure often arouses anxiety as to the proper functioning of the biliary tract, when actually the icterus is due to the superimposition of a pulmonary infarct and the inability of the congested liver to handle properly the hemolyzed blood pigment from the infarct. As a prognostic indicator, such jaundice, if severe, is of unfavorable import.

Venous pressure measurements are rapidly assuming a widespread and rightful position in the armamentarium of the clinician; and elevation of the venous pressure is of great value as a sign of right ventricular failure, no matter what the cause. Dilatation or pulsation of the jugulars develops, but much later than recordable variation in the measured venous pressure. A large pulse pressure of sometimes several centimeters occasionally occurs. Such a pulse is best recorded with the patient upright, since the recumbent position increases the venous pressure and makes the pulsation less evident. A point which often causes confusion is the differentiation between jugular pulsation and carotid pulsation. As White has shown, this error can

be avoided "by observing the sustained character of the venous (c plus waves) in contrast to the arterial pulse, and by its easy obliteration by relatively light pressure over the jugular bulb."

Edema of the dependent parts gives another evidence of failure of the right ventricle. Frequently complicating factors—such as, hypoproteinemia or local circulatory defects (as varicose veins)—exist; but the hydrostatic effect usually causes the edema to be more pronounced at least in the dependent parts whether they be feet and legs, back (especially over the sacrum), abdominal wall, chest, arm, or even side of the face. Often the degree of edema is not commensurate with the degree of myocardial failure and in such cases one of the complicating conditions may be the predominant controlling factor. Of course, we must remember that such extra-cardiac defects are quite capable of causing tremendous edema in the absence of heart disease; and, too often patients are seen who have had such non-cardiac edema treated for long periods by digitalis.

As in the left ventricular failure, a gallop rhythm also develops with failure of the right ventricle; but, in the latter, the arrhythmia is more notable just to the left of the manubrium, whereas in failure of the left ventricle, it is more pronounced at the apex.

Another result of congestion developing in right-sided heart failure is hydrothorax which early is almost always right-sided, though later it may be bilateral. In fact, left hydrothorax should suggest some other causation such as infection. Such extra cardiac factors should, of course, also be considered in right hydrothorax as well.

The importance of the x-ray as a diagnostic aid in heart disease has already been emphasized in the discussion of failure of the left ventricle. The findings in right heart failure are likewise helpful; here again the heart is always enlarged, often becoming smaller as compensation is restored, and the superior vena cava may be bulging and pulsation may be seen. However, since failure of the right ventricle

manifests congestion of the systemic circulation, the x-ray findings are by no means as potent an aid as they are in left ventricular failure where the revelation of pulmonary congestion often is a deciding point of evidence.

Circulation time is a valuable diagnostic aid in doubtful cases, but its importance is mainly relative to the left ventricle; namely, in differentiating cardiac dyspnea from bronchial asthma or other non-cardiac causes of dyspnea. Congestive heart failure shows increased circulation time in all of the tests.

The electrocardiograph is of little aid in the diagnosis of heart failure, except in giving insight into the primary etiology and in showing upon which ventricle the strain had fallen in the preceding period. Often electrocardiographic studies are needed in evaluating digitalis effects, but in most cases this can be readily determined clinically.

Another aid which is sometimes employed is the use of vital capacity determinations. It is obvious that such a procedure could be open to great individual variation and error, and its application is of little value except perhaps in following the progress of a patient.

The aid of the laboratory may be invoked for blood and urine studies. As previously mentioned, a hypoproteinemia may exist, with or without nephrosis, and with or without heart disease. Leukocyte studies and determination of the sedimentation rate are of value in ruling out the presence of infection. Erythrocyte count, hemoglobin, and hematocrit studies may reveal an anemia as a complicating or even a causative factor in heart disease.

PROGNOSIS OF CONGESTIVE HEART FAILURE

The outlook in such a picture is, of course, both for the immediate and the future, relative to the etiology. If the episode has been precipitated by a removable factor—such as, the excessive tachycardia of auricular fibrillation—the immediate prognosis is improved; but, if the episode is but one of many such or if it was spontaneously

or easily precipitated, the future outlook is very poor, and with each succeeding attack both the immediate and future prognosis is made poorer. However, though we may not be able to cure the patient, we can in most cases prolong life appreciably. The length of time and the ease with which a patient with mitral stenosis or chronic adhesive pericarditis may carry on his activities is often surprising. This fact is another feature of the importance of differentiating between the pulmonary congestion caused by these two conditions and from myocardial failure where the prognosis is very much worse. For congestive failure, the rule that "the larger the heart, the worse the future" generally applies.

TREATMENT OF ACUTE CIRCULATORY FAILURE

The preceding pages have dealt primarily with the diagnostic side of myocardial failure and rightly so since, although giving aid to the patient is our fundamental aim, proper diagnosis and evaluation is essential before treatment may be intelligently administered. Though most myocardial failure is gradual in its development, many cases are seen in which the failure is acute, and to meet such emergency a well-planned outline of treatment should be formulated. The fact that circulatory failure is a complex disorder as a rule is unfortunate, and to avoid errors a few simple criteria may be helpful. Acute circulatory failure may be of central or peripheral origin. In the central type—about which this paper is concerned—the cardiac mechanism is at fault. The other main type, peripheral circulatory failure or shock, occurs in the presence of competent heart function but is a result of defective peripheral circulation and inadequate return of blood to the heart. Treatment directed at the heart in this latter case would obviously be of no value, and the primary consideration is maintaining blood volume. In the former type, central failure, an entirely different therapeutic approach is needed wherein so-called cardiac drugs play a vital role.

Before continuing with a consideration of the treatment of congestive heart failure,

it seems advisable to summarize the picture in this condition and condense the more important features into less bulky form.

Hypertrophy and dilatation is the natural reaction for a heart in its attempt to compensate for the stresses put upon it by a constant, long-continued excess mechanical burden. For a time, the attempt at compensation is successful, and the work of the heart is successfully carried on so the patient is free of symptoms and thus ignorant of the impending danger. Finally, however, the compensation becomes inadequate and breathlessness on exertion appears. Soon after, edema of varying degrees is seen in the dependent parts of the body; then, the failing heart is subjected to some added stress, perhaps a respiratory infection, prolonged tachycardia or overexertion, and a sudden attack of pulmonary edema may be precipitated. Such a patient is usually seen sitting erect, fighting for his breath, and terrorized because of his feeling of suffocation, also often further encumbered by a hacking cough. The perspiration is profuse; the superficial veins are engorged and distended. With increasing severity of the edema of the lungs, a frothy, blood-tinged sputum may be coughed or spontaneously emitted from mouth or nostrils. In a situation as this one, immediate attention and a well-habituated therapeutic approach are essential if life is to be preserved.

Rest, sedation, digitalis, oxygen and diuretics are our most potent weapons in combating acute cardiac emergencies, and each of these plus the other important considerations will be discussed individually.

REST

By the time these patients are seen by a physician, they are in a state of utter exhaustion, both physically and mentally. They have already expended their meager physical strength in the frantic attempt to breathe; and, in some cases, in trying to care for their needs or get to a hospital or physician's office, the exertion has completely fatigued them. The anxiety accompanying such a state is severe and powerful in producing exhaustion. This anxiety

must be relieved by the physician's comforting and convincing reassurance. The extreme upright position, achieved by having the patient sit in a chair with head and arms resting on a table in front of him, is usually most comfortable and satisfactory. In the hospital the head should be raised to the limit, or in the ordinary bed a chair may be placed horizontally under mattress or pillows. By supplying constant and careful nursing, the patient is assured of every care, and that he should not exert himself in any way should be impressed upon him. Caring for the bodily needs of feeding, bathing, and using the bedpan should be carried out with the least possible disturbance. The patient's room should be well-ventilated with a constant influx of fresh air.

SEDATIVE DRUGS

In the treatment of congestive heart failure, only digitalis can challenge morphine in value or importance. Morphine (or a comparable opium derivative) should be given immediately, and the effects may be startlingly satisfactory. Apprehension and restlessness are abated, the exhausting struggle for breath is eased and more effective respiration takes its place, and often an invaluable sleep is abetted. The objection that the use of morphine in such cases may precipitate Cheyne-Stokes respiration or make respiration more irregular is perhaps just; but, in many cases it is possible to correct this condition should it be presented.

For patients in whom congestive heart failure is a semi-chronic state, the use of morphine may be criticized; but each individual problem, with its psychologic and philosophic aspects, must be considered singly. However, morphine should be given less frequently and in smaller dosage as improvement occurs; and, when morphine is no longer essential, the less potent drugs such as codeine may be substituted. The barbiturates or bromide may be used in this stage. But in the acute stage, one should not experiment with sedatives—morphine is unequalled then. Later, as long

as sleep and rest are secured, the choice of sedative drugs is wide.

DIGITALIS

In congestive heart failure, digitalis is our most powerful and effective method of attack; and, when congestive failure occurs in the presence of adequate digitalization, the therapeutic attack feels the weakness greatly. Digitalis is almost universally used, but the frequency of its misuse is as great as that of its proper use. The fact that it is so essential in treating congestive heart failure lends emphasis to the need that its proper use be understood, and in order that such may exist an understanding of the actions of this drug is important.

MODE OF ACTION

No pretense is made to attempt to cover the myriad of actual or theorized actions of digitalis. Only a brief summary of the more clinically relative actions is undertaken. In congestive heart failure, one of the more important actions is the lengthening of the refractory period and depressing or slowing auriculo-ventricular conduction. The control of the tachycardia and irregular rhythm of auricular fibrillation by digitalis depends upon this action. The direct effect of digitalis on the myocardium is of great importance, especially in the presence of relatively normal rate and rhythm. It increased the tone of the heart muscle and the contractility of the muscle fibers, thus aiding the dilated, decompensating heart. Another though less important action is its direct action upon the sino-auricular and the auriculo-ventricular nodes. This consists of depression of these nodes (increased vagal effect) and thus effects slowing of the heart rate.

MODE OF ADMINISTRATION

The most extreme difficulty experienced in the use of digitalis is in determining the proper dosage for the individual patient. Digitalis is well-known to be a potent poison, and like all poisons is capable of making the patient uncomfortable or even causing fatal results if pushed beyond the well-recognized toxic effects. On the other hand, just as frequently, too little of the

drug is administered and here, too, the patient suffers. The powdered leaf is generally more satisfactory than other preparations because of its stability and because with its use the dosage can be more efficiently controlled. The standardization has been recently changed, and the physician should familiarize himself with the potency of an accredited product and use it exclusively. Obviously, in the majority of cases, the optimum route of administration is by mouth. Absorption is complete, satisfactory; and, except for rare idiosyncrasy, there is no local gastric irritation and nausea is a manifestation of toxicity. Nausea and vomiting may be produced from splanchnic congestion resulting from the congestive heart failure, and in such a case a parenteral route should be used to avoid risk of poor absorption or loss through vomiting. Likewise, in acute congestive failure, the parenteral route is employed because of the greater rapidity of effect. In extreme cases, the drug may be injected intravenously.

DOSAGE

Formulae have been devised, as guides in the use of digitalis, by prolonged and painstaking clinical investigation under carefully controlled conditions. But these are not meant to serve as an exact routine in the treatment of acute congestive failure; rather they are meant to be used as a rough guide with observation of the patient as the final criterion of dosage. The figures usually accepted as a digitalizing dose for the average adult vary from 1.5 to 2.0 grams (22 to 30 grains) of powdered digitalis leaf. One may give 0.1 gram ($1\frac{1}{2}$ grains) of digitalis leaf for every 10 pounds of body weight (making proper deduction for edema) as a general rule. Before undertaking any digitalis therapy, one must ascertain whether or not the patient has previously received digitalis. The heart failure may actually be due to over-dosage of digitalis, and in such case the indiscriminate use of digitalis or any of its group of related drugs is contraindicated and might perhaps be fatal.

The severity of the patient's condition is

the index deciding the urgency of speed of digitalization. A frequently satisfactory method consists of giving one-half the total estimated digitalizing dose in divided amounts during the first twelve hours. The second half of the dose should be given in smaller doses at greater intervals, controlled by careful vigil for signs of toxicity. This second half may, for instance, be given as 0.1 gram ($1\frac{1}{2}$ grain) every four hours until toxic effects or symptoms appear, which, upon occurrence, signify the need for withholding the drug for about 24 hours after which a tentative maintenance dose may be started. Diuresis or relief of dyspnea are gratifying effects of digitalization. Nausea, vomiting, increase or onset of premature contractions herald the more serious toxic effects. Often the maximum therapeutic effects lie very close to the minimum toxic effect. To maintain a patient adequately digitalized, we must replace the amount of the drug excreted daily. This amount varies, but a tentative dose of 0.1 gram ($1\frac{1}{2}$ grain) daily may be instituted under observation to discover the individual reaction or variation.

When the severity of the acute congestive failure makes more rapid relief essential, a plan such as the following may be carried out: One may give 0.5 ($7\frac{1}{2}$ grains) of powdered leaf in 15 c.c. of sterile water injected intravenously; or a commercial preparation of equal potency may be similarly used. Strophanthin, or its crystalline alkaloid, ouabain, may be used if the patient has not previously received digitalis. If this is used, doses of 0.25 to 0.5 mg. may be used, following which complete digitalization or maintenance can be carried out with powdered digitalis leaf orally.

OXYGEN

The use of oxygen is coming ever more into its own in the treatment of congestive failure. Dramatic relief from restlessness and tachypnea may often be seen following the institution of oxygen inhalation. The patient may need reassurance when told that he is to be given oxygen for it often seems that "oxygen tent" is associated with a grave outlook to the average patient. On

finding how greatly his breathing is eased, however, his anxiety is quieted and often sleep quickly ensues. Oxygen may be given by tent, mask, or nasal catheter—the latter being simple and economical though perhaps uncomfortable for some. No definite rule governing the flow may be set down; however, six liters per minute is frequently satisfactory.

DIURETICS

There is a great difference of opinion about even the advisability of using diuretics in acute congestive heart failure; some people believing that the circulation already embarrassed should not be further overburdened by the added work of removing edema fluid. However, this argument at least does not hold when applied to those diuretics acting upon the kidney and decreasing the volume of circulating fluid in the vascular system. It is true that the matter of systemic edema is hardly a major problem in the treatment of acute congestive failure; but pulmonary congestion or edema is a very important one, and the use of potent diuretics may be of some benefit in relieving this problem. The removal of tissue edema fluid may enable the heart to recover enough perhaps to postpone recurrences of acute heart failure.

We cannot expect diuretics to remove large collections of fluid from the pleural or peritoneal spaces. For this purpose, paracentesis is the proper procedure, often giving the patient tremendous relief and making respiration much easier, deeper, slower and more effective. Happily, diuresis often follows paracentesis, resulting in diminution of peripheral or dependent tissue edema.

Perhaps the most effectual of the diuretics is that of the mercurial group, of which mercupurin is a very satisfactory member. It may be given intravenously in doses of 1 to 2 c.c. of 10 per cent solution, or intramuscularly in the same dosage. It should not be repeated within less than four days, and it may be used repeatedly for fairly long periods of time though tolerance eventually develops in many cases. Novasural and salyrgan in the same dosage are satis-

factory preparations of mercurial diuretics and are widely used. When given intravenously, care must be exercised to prevent any of these drugs from escaping into the subcutaneous tissues, since in such a case a large slough may be produced. If the intramuscular route is chosen, the gluteal region is the site of election and the needle should be deeply inserted. The effect of mercurial diuretics is said to be enhanced by the previous or coincident administration of 1 to 1.5 grams of ammonium chloride four times daily.

The xanthine diuretics are sometimes effective and are frequently used. Theobromine and aminophyllin are the two most widely used of this group and are sometimes given in doses of 0.25 to 0.50 gram three times a day. These drugs often produce nausea and vomiting, however, and may give the false impression of digitalis intoxication. Aminophyllin is of special value in cases of cardiac asthma or in Cheyne-Stokes respiration, in both of which it is best given intravenously in dosage of 0.50 gram in 20 c.c. of sterile water, injected slowly. Xanthine diuretics should not be used continuously over long periods of time.

VENESECTION

The prime indication for venesection is acute pulmonary edema, where it then may give dramatic and life-saving results. The blood (500-700 c.c.) should be removed rapidly since in pulmonary edema, minutes count. If the flow is not fast enough through an 18 gauge needle, a phlebotomy should unhesitatingly be done. Even in ordinary congestive heart failure, the removal of a large amount of blood may give the failing heart just the respite it needs to make the difference between recovery and progressive failure.

The so-called "bloodless venesection" is often of some value and consists of tourniquets applied to extremities in order to decrease the venous return to the heart. By leaving one extremity at a time free, and rotating the tourniquets, this procedure can be prolonged for quite long periods.

DIET

During an episode of acute congestive failure, the diet is not a major consideration since the patient is too ill to desire nourishment and his caloric need is at a low level. Frequent small amounts of cracked ice or orange juice relieve the dryness of the lips and mouth which has resulted from the dyspnea and mouth-breathing. When the acute danger is over and the patient begins to recover, the Karrell diet is very satisfactory and is extensively used. It consists of 200 c.c. of skimmed milk four times daily. As recovery progresses, fruit juice may be substituted, and gradually small amounts of semi-solid, then solid food may be added. While edema persists, the diet should be low in salt or salt-free, and the total daily intake of fluid should be limited to one and one-half liters per day.

MISCELLANEOUS

Adrenalin and other vaso-pressor drugs have no place in the treatment of congestive heart failure except in the presence of ventricular standstill, where it may then be boldly injected directly into the heart chamber. Caffeine, coramine and cardiazol likewise are not indicated unless a need for respiratory stimulation becomes evident. Some claim that squill glucoside or uroguin (having digitalis-like action) are sometimes effective in the rare cases where an intolerance to digitalis exists.

A SYMPOSIUM ON THE USES OF SULFONAMIDES*

THE SULFONAMIDES IN INTERNAL MEDICINE

C. J. TRIPOLI, M. D.†
NEW ORLEANS

Ever since Foerster¹ in 1933, and Domagha² in 1935, first demonstrated that the sulfonamide drugs could protect mice from otherwise fatal infection with hemolytic streptococci, experimental and clinical data

on their use have been accumulating. The indications for their administration and the limitations of their clinical effectiveness in medical diseases are now well recognized, and the literature on the subject is so extensive as to make impractical any detailed consideration of it within the scope of this paper, which will necessarily be limited to the use of the sulfonamides in clinical medicine.

Some idea of the widespread use of these drugs can be gained from the fact that in 1941 approximately 1,750,000 pounds of sulfapyridine, approximately 1,200,000 pounds of sulfanilamide, and between 1,000,000 and 1,500,000 pounds of sulfathiazole were produced in this country.² It is a reasonable assumption that during the same period between 10,000,000 and 15,000,000 persons were given these drugs.

GENERAL CONSIDERATIONS

In general, the so-called pyogenic bacteria have been found to be most susceptible to the influence of the sulfonamides, and the mechanism of their chemical action has been the subject of intense interest and considerable conjecture. In brief, it may be stated that these drugs are quite similar in chemical structure to certain essential substances (such as p-aminobenzoic acid or a like substance) required by the bacteria for their normal metabolism and growth. Their action is apparently purely bacteriostatic. The organisms, seemingly unable to distinguish between the sulfonamides and the substances needed for their growth, are subjected to the influence of the drugs. Being deprived of essential p-aminobenzoic acid or similar substances, they cannot either grow or multiply, they simply die. The process of bacterial destruction is probably accelerated by the mechanism of immunity of the animal body.

This theory is often used to explain the well established observation that the clinical effectiveness of the sulfonamides is greatest when they are given early in the disease process, before the causative bacteria have had time to build up and accumulate any great store of essential nutritive substances. An impressive example of this

*Read before the Orleans Parish Medical Society, June 14, 1943.

†From the Hotel Dieu Division of Clinical Research of the Helis Institute for Medical Research, New Orleans, Louisiana.

fact was given by Flippin and his group:⁴ In 1,635 cases of pneumococcic pneumonia, the mortality was 3.3 per cent in 451 patients adequately treated with the sulfonamides within the first 48 hours of the illness, as compared with a mortality of 17.9 per cent in 633 patients whose treatment was begun after 96 hours. The incidence of complications and the morbidity are both greater in the patients in whom treatment is started relatively late in the course of the disease.

DOSAGE AND ROUTE OF ADMINISTRATION

In general, except when used in certain enteric diseases, the maximum therapeutic efficiency of the sulfonamide drugs is accomplished by administering them in such a manner as to obtain the most rapid and most effective blood level. A blood concentration between 5 and 10 mg. per cent is satisfactory in the average case. It is not possible to substantiate the theory that blood levels of 30 to 50 mg. per cent are more effective therapeutically than are the lower levels, and there is little if any evidence to support the idea that in mildly ill patients the dosage should be small, while in severely ill patients it should be large. When one considers that toxic reactions are more frequent with the larger doses, the idea that the higher blood levels are without danger may be critically questioned.

In the average case, as a routine procedure, the oral route of administration is entirely satisfactory. An initial dose of 4 to 6 gm. of the preferred preparation is followed by subsequent 1 gm. doses every four to six hours until the total dosage has been given. The intravenous administration of the sodium salts is advantageous only in gravely ill patients, in whom the oral route is impractical because of vomiting, inability to swallow, and other reasons, or in whom an effective concentration in the blood stream is desirable within 15 to 30 minutes. The sodium salts may also be satisfactorily administered by hypodermoclysis in isotonic salt solution,⁵ the average concentration being 5 gm. per 1,000 c. c. of fluid. Intraspinal administration, formerly

regarded as advantageous in cerebrospinal fever and pneumococcic meningitis, has been generally discontinued as useless and probably harmful.

Clinically, the sulfonamide drugs, if given in adequate doses, exert their maximum effect within a short period of time. In the absence of complications it is only occasionally necessary to continue their administration beyond six days. Fortunately, the majority of toxic reactions do not occur until after this time. It would be well for all of us to heed the often-repeated warning that when the sulfonamides, in adequate dosage as determined by satisfactory blood levels, have no beneficial therapeutic effect within the first 60 to 90 hours, their use should be discontinued. This plan should be the rule unless there is some definite reason for their further trial, in spite of the risk of toxic reactions.

PNEUMONIA

There is no longer any question as to the therapeutic benefit of the sulfonamides in pneumonia caused by the pneumococcus, the staphylococcus, the streptococcus, and perhaps *B. mucosus capsulatus* or *H. influenzae*. On the other hand, in pneumonia due to organisms other than this so-called sulfonamide-affected group there is little evidence that they are of any value, and the resulting toxic reactions may prove harmful. This is notably true of the relatively widespread and apparently increasingly frequent entity variously called "atypical pneumonia," "influenzal pneumonitis," "acute diffuse bronchiolitis," "acute interstitial pneumonitis," or, more popularly, "virus type pneumonia." The clinical manifestations and the severity of this entity differ, but the absence of significant bacteria is a common characteristic, and for the present, treatment remains symptomatic.

Even at the risk of seeming repetitious, let me emphasize again the limitations of the sulfonamides in pneumonia. They are not agents to be used to the exclusion of recognized and proved supportive therapy. They are not substitutes for such therapy. They are supplemental to it.

It is good practice in all cases of pneumonia to institute chemotherapy at once, while the specific offending organism is being determined. When the causative organism is properly identified, chemotherapy may be continued or discontinued, according to the findings. If the administration has been unnecessary, no harm will have been done, since toxic reactions are seldom manifest in the first few days. Bacteriologic information is of special value in the cases in which no response to chemotherapy is observed within 24 to 36 hours, since specific serum is frequently useful under these circumstances.

Sulfadiazine is now widely used in pneumonia, almost to the exclusion of the other compounds formerly in favor.

MENINGITIS

The advent of the sulfonamides has dramatically affected the mortality rate of pneumococcal meningitis and cerebrospinal fever (meningococcic meningitis). Hodes, Smith and Ickes⁶ recently reported a series of 60 cases of pneumococcic meningitis with a recovery rate of 44 per cent. At the New Orleans Charity Hospital the former mortality of approximately 65 per cent in cerebrospinal fever has been reduced to less than 1 per cent.⁷

Sulfadiazine, because of its low toxicity, is the drug of choice for routine use, being equally as effective as sulfapyridine and sulfathiazole. Oral administration is apparently as effective as the intravenous route, though it is still of value in the occasional comatose or critically ill patient. Intraspinal therapy has been shown to possess no advantages whatsoever and to be distinctly harmful.⁸ Lumbar puncture should be done only for diagnostic purposes. Specific antitoxin may be used in conjunction with the sulfonamides if desired, though the general opinion is that it is not necessary.

Hodes and his associates, who advocate this general plan of treatment in pneumococcal meningitis emphasize that surgical drainage of the focus of infection is best delayed until the meningitic infection is

controlled and the patient's condition has improved under conservative therapy.

ACUTE BACILLARY DYSENTERY

The results of the sulfaguanidine therapy in acute bacillary dysentery has been uniformly favorable.⁹ The basis of its therapeutic effectiveness lies in the fact that since the drug is poorly absorbed, its bacteriostatic effect is both concentrated and prolonged at the site of the invading organism.

Succinyl-sulfathiazole seems to possess even greater advantages in acute bacillary dysentery than sulfaguanidine. Smyth and his associates¹⁰ have shown that it is of low toxicity and that it has a striking bacteriostatic action not only against the usual intestinal flora of man but also against the Shiga, Sonne and Flexnor strains of dysentery bacilli in both the acute disease and the carrier stage. The average adult dosage is 15 to 20 gm. (0.25 gm. per kg. of body weight) initially used for three or four days in obstinate cases. Some 5 per cent of the drug is absorbed and is excreted by the kidneys. Toxic reactions, especially when larger doses have been given and repeated, have been reported, and are similar to the reactions caused by other sulfonamides.

DISEASES CAUSED BY NON-SULFONAMIDE-AFFECTED ORGANISMS

Sulfonamide therapy is justified tentatively in adequate doses, for periods of five or six days, in such diseases as typhoid fever, undulant fever, and tularemia, though the results have not been consistently good. No beneficial effect has been noted in pulmonary tuberculosis, although good results have been reported in the treatment of secondarily infected tuberculous sinuses. Active bacterial endocarditis and rheumatic fever are not influenced by sulfonamide therapy.

SULFONAMIDE-FASTNESS

It has been demonstrated in vitro that certain bacteria may acquire a tolerance or resistance to one or more of the sulfonamide compounds. The same phenomenon may be observed clinically, as the result of

unsuccessful chemotherapy.¹¹ Recently it has also been shown¹² that staphylococci which have become sulfonamide-fast have acquired the power to accumulate large amounts of the p-aminobenzoic acid which is essential for their growth but which definitely inhibits sulfonamide effectiveness. The use of urea will overcome the resistance of sulfonamide-fast staphylococci to sulfonamides. The final outcome of this phase of the problem as regards other organisms is awaited with considerable interest.

TOXIC REACTIONS

The sulfonamides, like other chemotherapeutic agents, are capable of initiating toxic reactions varying from mild to very serious. In the former group are such reactions as headaches, nausea, vomiting, and various rashes. In the latter are such reactions as agranulocytosis, acute hemolytic anemia, aplastic anemia, purpura hemorrhagica, thrombocytopenic purpura, urinary concretions, acute nephrosis, azotemia, dermatitis exfoliativa, pulmonary edema, hyperpyrexia, convulsions, psychoses, persistent cerebral damage, and acute hepatic degeneration.¹³ Toxic reactions are

most likely to occur after the fifth day of administration, and are particularly frequent in persons previously sensitized to the sulfonamides as long as three months ago. The severe type of reaction is most frequent when large doses of the drug have been given, especially over a long period of time.

The best safeguard against renal complications is obviously a fluid intake sufficient to insure a daily urinary output of at least 1,500 c. c. Alkalinization of the urine is a further precaution against crystalluria and the formation of renal calculi. The administration of urea¹⁴ is an additional prophylactic measure but seems hardly necessary if fluids and alkalis are given in adequate amounts.

The following cases are presented merely to illustrate briefly two different types of toxic reactions in bacterial infections resistant to sulfonamide therapy:

CASE NO. 1

A. M., a white male 25 years of age, was admitted to the Hotel Dieu service of Dr. Chetta, December 18, 1942, complaining of an ulcer on the right hand and moderate fever of 12 days'

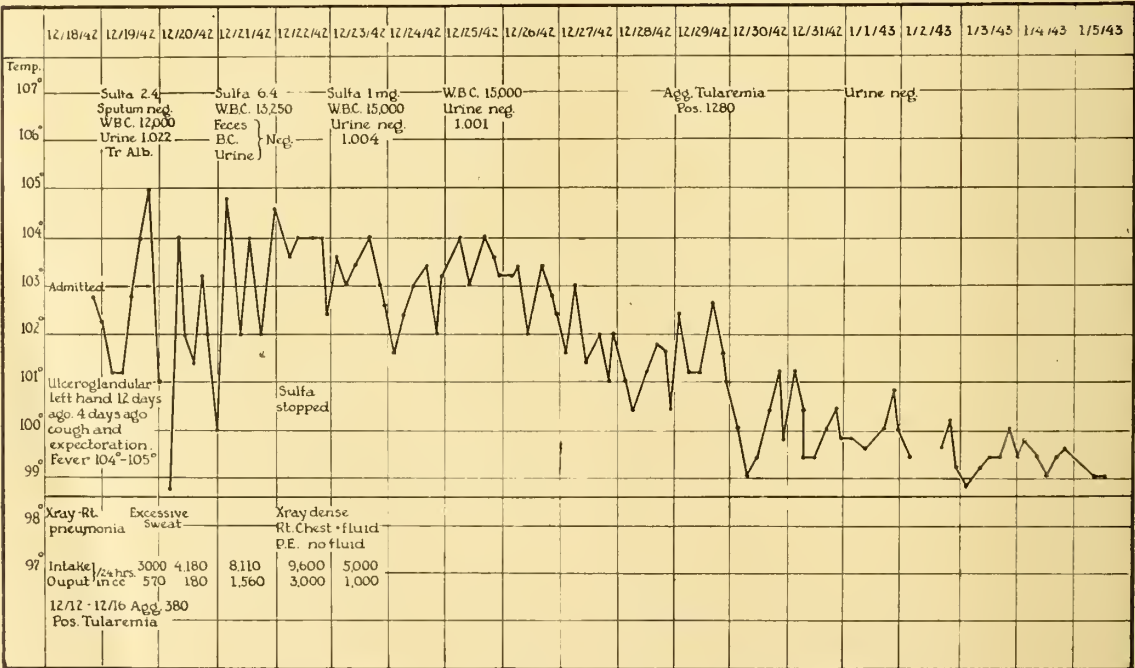


Chart I. Case of pneumonia showing toxic reaction from sulfathiazole and without demonstrable effect.

duration. Four days before admission he had developed a productive cough and physical signs of pneumonia on the right side; at the same time the fever rose to 104° to 105°F. Questioning revealed that on several occasions in the weeks before the onset of his illness the patient had cleaned wild rabbits, and on the sixth and tenth day of the illness blood serum agglutinations for tularemia organisms revealed positive reactions in 1:380 dilutions.

The blood count showed a moderate leukocytosis but urinalysis, blood culture, and examination of the sputum and feces revealed no abnormalities. Roentgenologic examination of the chest revealed consolidation of the entire right lung, most marked in the central region.

Oral sulfathiazole therapy had been begun on the fifth day of the illness and was continued for twelve days. The sulfathiazole level of the blood when the patient was hospitalized was 2.4 mg. per cent and on the twelfth day of administration was 6.4 mg. per cent. The patient, however, showed no improvement. The pneumonic process was progressive, toxemia was marked, and sweating was extreme. Despite a daily intake of 3,000 c.c., 4,180 c.c., 8,110 c.c., and 9,600 c.c., of fluid, the

daily urinary output was respectively 570 c.c., 180 c.c., 1,560 c.c., and 3,000 c.c.

Finally, as already stated, chemotherapy was terminated on the twelfth day of administration and only symptomatic therapy continued. The urinary output increased and the excessive sweating decreased, as did the toxemia. On the fifth day after the drug had been discontinued the fever began to subside. Blood serum agglutination tests at this time were positive in a dilution of 1:1,280.

Sulfathiazole had no demonstrable effect on this patient's infection in the twelve days during which it was administered, though the toxic reaction obviously added considerably to the seriousness of the primary disease process.

CASE NO. 2

H. L., a white male 54 years of age, was admitted to Hotel Dieu, December 1, 1942, complaining of fever, severe headache and a productive cough of eight days' duration. His condition had become progressively worse, and when he was hospitalized there were physical signs of pneumonia in the left side posteriorly and his temperature was 103.5°F. The blood count revealed 13,750 white blood cells per cu. mm. and 80 per cent neutrophils. Sputum

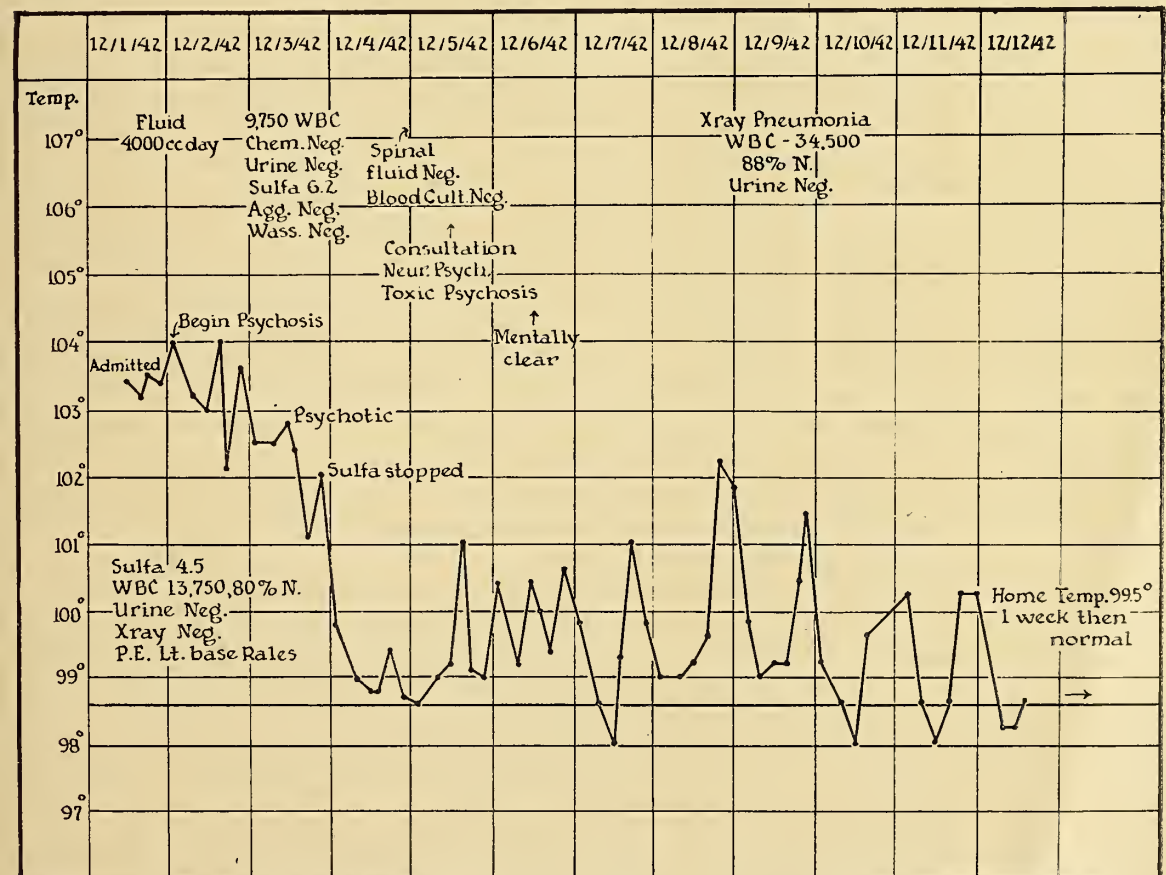


Chart II. Case of pneumonia (type indeterminable) showing reaction from sulfonamide and no therapeutic benefit.

tests were unsatisfactory. Urinalysis, blood chemical studies, serologic tests, tests for agglutination, spinal fluid, blood cultures, and roentgenologic examination of the chest furnished no diagnostic help.

Chemotherapy had been begun at the onset of the illness and was continued until the fourth day of hospitalization. At the time the patient entered the hospital the sulfathiazole level of the blood was 4.5 mg. per cent.

The patient's general condition as well as his pneumonia had shown no improvement under therapy, and the day after admission he developed a toxic psychosis. The disorientation progressed to such a degree that he had to be restrained. Finally, because no other cause for the psychosis could be found, chemotherapy was discontinued.

Improvement occurred at once. The psychosis rapidly disappeared, the temperature fell, and the subsequent course of the illness was not unlike that of a moderately severe pneumonia terminating by slow lysis. Blood chloride determinations, as suggested by Luetscher and Blackman¹⁵ in a somewhat similar case, in which cerebral damage was persistent, were unfortunately not carried out.

The psychosis and continued temperature elevation in this case were by all indications caused by sulfonamide therapy, which at the same time had no effect at all on the primary infection.

SUMMARY

A brief and essentially simplified review of sulfonamide therapy in internal medicine has been presented, the most important considerations of which may be outlined as follows:

1. Medical diseases caused by sulfonamide-affected organisms (pneumococcus, staphylococcus, streptococcus, meningococcus, bacilli of the dysentery group, and probably *H. influenzae* and *B. mucosus capsulatus*) have been successfully treated by chemotherapy.

2. A more or less standard dosage has been accepted for routine use and, except in extreme cases, is apparently essential to accomplish a maximum therapeutic effect with a minimum of risk.

3. The oral route is satisfactory in the majority of cases in attaining and maintaining a satisfactory blood level. The intravenous and subcutaneous routes may be advantageously used in special circumstances, but intraspinal therapy in meningitis has been discarded.

4. Sulfadiazine is apparently the compound of choice, being as effective as any

of the other sulfonamides and considerably less toxic.

5. Effective dosage over a short period of time (less than six days) will diminish the incidence of toxic reactions to the sulfonamides.

6. Careful clinical and laboratory examinations will go far to prevent toxic reactions from chemotherapy and are important guides to therapy if such untoward effects occur.

7. Maintenance of a satisfactory fluid balance and alkalization of the urine are usually effective prophylactic measures against renal complications.

8. Further studies, perhaps with other compounds, are necessary to overcome the present obstacles in the treatment of diseases caused by organisms which hitherto have proved resistant to sulfonamide therapy.

9. Some progress has already been made in solving the problem of sulfonamide-fastness.

10. Judicious use rather than promiscuous abuse is the most satisfactory approach to successful chemotherapy in clinical practice.

REFERENCES

1. Foerster, cited by Long, P. H., and Bliss, E. A.: The Clinical and Experimental Use of Sulfanilamide, Sulfapyridine and Allied Compounds, The Macmillan Company, 1939, New York. (Foerster, R.: Sepsis im Anschluss an ausgedehnte Peritonitis. Heilung durch streptozon, Zentralbl. f. Haut. u. Geschlechtskr., 45:549, 1933.)
2. Domagk, G.: Ein Beitrag zur Chemotherapie der Bakteriellen Infektionen, Deutsche med. Wchnschr., 61:250, 1935.
3. Long, P. H.: Discussion of Sutliff et al. (Reference 13).
4. Flippin, H. F.: Causes for unsuccessful sulfonamide therapy of pneumonia, South. M. J., 36:219, 1943.
5. Talpin, G. V., Custer, E. A., and Young, L. E.: The sodium salts of sulfapyridine, sulfathiazole and sulfadiazine. Their clinical use by hypodermoclysis, J. A. M. A., 121:313, 1943.
6. Tripoli, C. J.: Bacterial meningitis; a comparative study of various therapeutic measures, J. A. M. A., 106:171, 1936. Tripoli, C. J., and Selser, R. E.: The therapy of cerebrospinal fever; a comparative analysis of the therapeutic results in 91 cases from Charity Hospital of Louisiana at New Orleans, New Orleans M. & S. J., 94:232, 1941.
7. Hodes, H. L., Smith, M. H. D., and Ickes, H. J.: Sixty cases of pneumococcal meningitis treated with sulfonamides, J. A. M. A., 121:1334, 1943.
8. Tripoli, C. J.: The treatment of epidemic meningitis (cerebrospinal fever): results in 115 cases with a special reference to the fallacy of intraspinal therapy, South. M. J., 35:472, 1942.
9. Marshall, E. K., Jr., Bratton, A. C., Edwards, L. B., and Walker, E.: Sulfanilylguanidine in the treatment

of acute bacillary dysentery in children, *Bull. John Hopkins Hosp.*, 68:94, 1941. Lyon, G. M.: Chemotherapy in acute bacillary dysentery: clinical types of acute bacillary dysentery, *West Virginia M. J.*, 37:54, 1941. Rantz, L. A., and Kirby, W. M. M.: The use of sulfaguanidine in the treatment of dysentery carriers, *J. A. M. A.*, 118:1268, 1942.

10. Smyth, C. J., Finkelstein, M. B., Gould, S. E., Koppa, T. M., and Leeder, F. S.: Acute bacillary dysentery (Flexner). Treatment with sulfaguanidine and succinyl-sulfathiazole, *J. A. M. A.*, 121:1325, 1943.

11. Editorial: Resensitization of Sulfonamide Fast Bacteria, *J. A. M. A.*, 121:680, 1943.

12. Editorial: Sulfonamide Fastness, *J. A. M. A.*, 122:376, 1943.

13. Sutliff, W. D., Helpern, Milton, Griffin, Gerard, and Brown, Herbert: Sulfonamide toxicity as a cause of death in New York City in 1941, *J. A. M. A.*, 121:307, 1943.

14. Sobin, S. S., Aronberg, L. M., and Rolnick, H. C.: The nature of the renal lesion with the sulfonamides and its prevention with urea, *Am. J. Path.*, 19:211, 1943.

15. Luetscher, J. A., Jr., and Blackman, S. S., Jr.: Severe injury to kidneys and brain following sulfathiazole administration: high serum sodium and chloride levels and persistent cerebral damage, *Ann. Int. Med.*, 18:741, 1943.

—0—

SULFONAMIDES IN SURGERY

ISIDORE COHN, M. D.

NEW ORLEANS

Consciously or unconsciously by our presence, and by the discussion of the subject this evening, we are once again paying tribute to Pasteur who: "First opened our eyes to our multitudinous enemies in the kingdom of the infinitely little," (W. W. Keen). We also pay tribute to Lister who elaborated antiseptic principles for the treatment of wounds based on Pasteur's work.

Surgical development has depended upon loyalty to the ideals of the fathers of medicine; devotion to the duty of saving human life; alertness, and research for new principles, and the utilization of methods and agents, for the application of advances in biological, physical, and chemical methods.

"It falls to the lot of few men to appreciate the effect of various modes of treatment in a particular disease; for if a patient recovers, whatever was the treatment, whether good or bad, we flatter ourselves it was the effect of our superior merits in conducting the disease; but future experience may convince us that the recovery of which we so vainly boasted, was the victory of nature over the malpractice of art," (Kentish—1797).¹

Since Lister's day thoughtful pioneers

have tried to find the ideal antiseptic for local application and for parenteral purposes. Countless agents have been used locally. Many times within the last forty years, enthusiastic reports have been made relative to the value of a specific agent. The present experience is no exception.

To Ehrlich we are indebted for the establishment of many of the sound fundamental principles of chemotherapy. Both success and failure have crowned the achievements of many enthusiasts who sought in the interval between early time and the present, to give us specifics for various types of bacteriemia and septicemia.

Some may remember the enthusiastic wave which followed Hugh Young's announcement of the intravenous use of mercurochrome and gentian violet; others may remember the claims which were made for urotropin as a bacteriostatic—or bactericidal agent when administered in large doses in gallbladder disease, typhoid, and meningeal infections.

It is well at the outset for us to remember that we must not discard recognized principles, but, rather should we accept the sulfa drugs as agents to be used in conjunction with surgery and not as a substitute for surgery, and this particularly applies if there is already present a localized infection.

The literature which has developed on the use of sulfonamides in surgery during the last few years is too large for one to attempt to cover completely. Many of the papers are restatements,—few deal with fundamental principles. Many antiseptics are used without knowledge of the action of the agent, whether it is bacteriostatic, or bactericidal. Many failures in the use of the sulfa drugs are due to the fact that at times inhibiting factors on the action of the drug in particular tissues are not considered. I think that it cannot be denied that in the use of the sulfa drugs many people have followed blindly high powered eloquent salesmen, whether they be surgeons or detail men who, though sincere, place emphasis on the wrong feature in the scheme by which success has been at-

tained. It is axiomatic that no finality can be attained until ultimate knowledge has been achieved. This is the utopia which we cannot conceive with our finite mind. Fundamental surgical principles, the basis of whatever modicum of success is attained, usually find their way to the surface.

(1) In discussing sulfonamides in surgery it is essential for us to understand that these drugs act with more facility on some organisms than on others; (2) that their action is probably not bactericidal, but bacteriostatic, and the extent to which they are bacteriostatic depends on the blood concentration of the particular drug. The relative solubility of the particular drug makes one agent more active than another.

Hamilton Bailey² reminds us: "There is little evidence that chronic infections due to an organism are materially influenced by chemotherapy, even though acute infection with the same organism responds well to the particular sulfa drug."

It is well to recognize the toxic effects of the various sulfa drugs. A low concentration of sulfa drug is ineffective and a high concentration is toxic. A mean level if attained rapidly is effective.

Recognizing the fact that toxic effects do occur, a surgeon in the management of his patient should not overlook the utilization of the proper procedures for overcoming the ravages of the bacterial infections on the body. From an article on the prevention of infections in wounds and burns, (prepared by the Committee on Chemotherapeutic and other Agents, and the Committee on Surgery of the Division of Medical Science of the National Research Council)³ the following is quoted: "It is now known that two biological factors play an important part in the healing of all types of wounds and burns, deficiency in plasma protein and vitamin deficiency."

This necessary warning is given that we do not depend entirely on the use of chemotherapy, and overlook important biological facts and surgical principles. The Council also reminds us that "tissues cannot regenerate maximally unless protein is available for cellular proliferation."

End results are dependent on the combined utilization of all available agents, methods, and biological principles at our command if we are to obtain maximum success in the handling of our patients.

The organisms which respond best to sulfonamides locally applied are the streptococcal group, particularly of the beta-hemolytic type and colon bacillus infection. According to many writers, staphylococcal infections do not respond well to the sulfa group. Hamilton Bailey states: "Staphylococcal infections are difficult to treat, as no chemotherapeutic agent yet discovered has an outstanding activity on the organism. Clostridial infections still remain in the undetermined group as to the exact value and exact place that chemotherapy will have in the treatment of these infections."

In the circular letter issued by the Surgeon General's office, February 23, 1942,⁴ the following may be found: "Gas bacillus infection—in serious injuries where gas bacillus infection is likely, it is recommended that all rational surgical procedures, such as debridement may be carried out as soon as possible, and that all necessary supportive treatment be administered, sulfanilamide is at present recommended as the drug of choice."

"The use of polyvalent gas gangrene antitoxin when in the opinion of the Medical officer its use is indicated."

STERILIZATION OF SULFA DRUGS

There is a difference of opinion as to whether various sulfa drugs should be sterilized prior to using.

Hamilton Bailey has said: "Provided a reputable sulfonamide preparation is used there is no necessity to sterilize it before application to an open wound."

"Herrell and Brown have never seen and do not know of any incident in which the development of infection due to spore forming organisms could be attributed to the introduction of any of these drugs into an infected wound."

Welsh, Slocum, and Herwick,⁵ state that sulfonamides contaminated with tetanus spores and implanted in guinea pigs will not protect these animals from the develop-

ment of tetanus. They report a fatal case of tetanus which developed following the use of unsterile sulfapyradine powder after a pelvic operation. On the basis of their experiments they advise: "All sulfonamide powders for use in deep wounds should be sterilized before use."

The most startling and valuable report on the use of sulfa drugs, a report which eclipses all experimental work, was the clinical experience obtained as a result of the Japanese attack at Pearl Harbor.

Moorhead⁶ reported, as a result of this experience: "that purulent exudate was practically absent, so much so that it became the subject of universal comment."

John S. Lockwood,⁷ commenting on the Pearl Harbor experiences, stated: "The growing weight of evidence justifies the opinion that the major problem of infection in traumatic wounds may be avoided by a proper combination of surgical treatment and sulfonamide therapy.

"Sulfanilamide is preferred for topical use in clean or contaminated wounds. The main advantages of sulfanilamide for topical prophylactic use are its high solubility, efficient diffusion, and its lack of interference with normal wound repair—properties in which sulfadiazine and sulfathiazole appear to be relatively at a disadvantage."

The Military Surgical Manual⁸ states: "Although still in the developmental stage, the use of certain drugs of the sulfonamide group, for combating pyogenic infection in wounds and infection of the blood stream, already has been demonstrated to be one of the great therapeutic advances of the decade. Application of these drugs locally in the wounds, and administration by mouth and parenterally to the wounded soldier and civilian, is now being generally adopted. For the anaerobic, gas producing infections, compounds that liberate oxygen, such as zinc peroxide, as well as the serum from animals immunized to these organisms, are saving lives and limbs of those whose wounds are contaminated with these anaerobes. The general administration of tetanus toxoid to the troops when inducted into military service is proving even more

effective than immunization with tetanus antitoxin in preventing tetanus among the wounded."

In a recent report by the Committee on Chemotherapy and the Committee on Surgery of the Division on Medical Science, of the National Research Council we find application of one of the most progressive steps since sulfonamide drugs have been introduced, that is the feasibility of delayed debridement and closure. "Recent experiences demonstrated beyond doubt the value of the application of crystalline sulfonamide to wounds which are awaiting debridement. There is every evidence that it prevents the development of infection in contaminated wounds. *Regardless of the number of hours a patient is seen after the wounding, if the wound has been treated with crystalline sulfanilamide, debridement should be carried out.*"

This is definitely valuable as a progressive step in the handling of war wounds. It is recommended by the Committee that sulfanilamides be given in 1 gram doses every four hours in conjunction with the local application of the sulfanilamide pack in the wound.

From the foregoing it is not to be understood that the use of sulfa drugs in the wound, where time permits should be considered as a substitute for the basic principles in wound treatment.

The presence of pus or dead or dying tissue interferes with the efficient action of the sulfa drugs. In order to accomplish the best results when these drugs are used there must be drainage of any purulent accumulation.

Sulfa drugs have been suggested in the treatment of peritoneal infections. The logic of success in the use of these drugs in the peritoneum has been demonstrated by experimental work of Ravdin, Rhodes and Lockwood:⁹ "Since transudation is known to occur into the peritoneal cleft, it was of interest to determine whether sulfanilamide passed from the blood into the peritoneal transudate or exudate.

"In the dog receiving sulfanilamide we have found that the drug passed rapidly

into fluid injected into the peritoneal cavity.

"Dogs previously anesthetized with sodium amytal were given intraperitoneal injections of physiologic saline solution one hour after receiving sulfanilamide solution by hypodermoclysis. One half hour later a sample of peritoneal fluid was aspirated and the sulfanilamide concentration determined. Even in this short time the level in the peritoneum had risen to nearly one-half of the blood level."

From the above it is logical to conclude that the giving of sulfanilamide either by hypodermoclysis or intravenously actively aids in the overcoming of peritoneal infections.

Sterling Mueller and James K. Thompson¹⁰ have confirmed the work of Ravdin and they advocate the use of 6 or 8 per cent of the pounds of the body weight in grams be introduced intraperitoneally. They caution that the dose should never exceed 18 grams and this amount should only be used in severe cases.

Powers¹¹ cautions against introducing large quantities of sulfanilamide powder into the peritoneal cavity because of the rapid absorption from the peritoneum and the damage to the liver, which occurs in some patients who have had more than 5 grams of the drug introduced into the abdomen. He says: "I have seen three patients die of toxic hepatitis following the peritoneal introduction of 10 grams of the drug."

Fred Collier agrees with Bowers, however, that 5 grams intraperitoneally is the maximum amount which should be used. It is important therefore, that the amount introduced directly into the peritoneum should be carefully considered.

Great controversies have developed with regard to the use of the sulfonamides in osteomyelitis. In the recent literature on osteomyelitis one can find authority, if one considers every report as authoritative for every form of treatment from sulfa drugs alone, a combination of surgery, sulfa drugs, and antitoxin, or surgery plus sulfa drugs.

The present opportunity is not offered to discuss the treatment of osteomyelitis, but only that phase of the treatment which includes the use of sulfa drugs.

In the recent literature Albert Key of St. Louis, reasserted his belief in early operation in the majority of cases. He delays operation only long enough to combat dehydration. In addition to local chemotherapy he uses antitoxin in selected cases. The use of antitoxin is based on the fact that while "sulfonamides are antibacterial it does not mean that they are antitoxic." (Hamilton Bailey)

John Wilson of Los Angeles stresses the importance of understanding that acute osteomyelitis is a disease of the whole organism, not only a pyogenic infection of the bone. He believes that drainage should be instituted after the effects of the generalized infection have been overcome.

Pemberthy and Weller believe in early and adequate surgical drainage and the use of the sulfa drugs which they believe "apparently" limit the complication of the disease.

Paul Callona deplures radical operations in the acute stages of the disease.

A few facts should be considered: (1) Most of the cases of hematogenous osteomyelitis are staphylococcal in origin; (2) none of the sulfa drugs are specific for the staphylococcus; (3) it is important for us to remember that none of the drugs act well in the presence of pus; (4) in all surgical conditions in which we suspect abscess formation drainage should be instituted.

Osteomyelitis is one in which the sulfa drugs should be used in conjunction with surgery and not as a primary method of treatment.

It would do no good to prolong the discussion of the relative merits of surgery versus sulfa drugs in osteomyelitis. I do not believe that it should be necessary to do so. A surgical procedure plus any adjunct is desired rather than one without the other.

CONCLUSIONS

Errors and abuses in the use of the sulfonamide group of drugs continue to be made. Methods are often substituted for fundamental surgical principles. It is wise to remember that the sulfonamides and other forms of chemotherapy are adjuncts to be used in combination with recognized surgical principles. Chemotherapy is not a substitute for surgical intervention. It has been demonstrated many times that the action of chemotherapeutic agents are inhibited by the presence of devitalized cellular elements which are the product of infection or injury. To function well the sulfonamides must not be inhibited by pus or dying tissue.

Abuses in the use of chemotherapy are made by those who use routinely a particular drug irrespective of the type of organism. Errors are made in the use, and abuses follow if appropriate dosages are not observed. Insufficient dosage to produce necessary blood concentration are ineffective; overdosage produces toxic effects. The dose of sulfonamides must be controlled by proper and regular studies of blood concentration. These drugs are abused when careful observation for toxic manifestations are not made.

Careful studies should be made at regular intervals to note the effect of the sulfonamide on the hematopoietic system.

These are powerful agents for good if properly used. They are dangerous when carelessly handled.

REFERENCES

1. Kentish, Edward: *Essay on Burns* (1797). P. 20. Published in London.
2. Bailey, Hamilton: *Chemotherapy: Surgery of Modern Warfare*, Williams & Wilkins, Vol. II, 1942, Pp. 491-501.
3. Committee on Chemotherapeutic and other Agents and the Committee on Surgery of the Division of Medical Sciences of the National Research Council, *War Medicine*, 2:488, 1942.
4. Circular letter No. 17—Office of the Surgeon General of the United States Army, Washington, D. C., *War Medicine*, 2:466, 1942.
5. Welsh, Henry; Slocum, Glenn, and Herwick, Robert P.: Tetanus from sulfonamide dusting powders, *J. A. M. A.*, 120:361, 1942.
6. Moorhead, John H.: Surgical experience at Pearl Harbor, *J. A. M. A.*, 118:712, 1942.
7. Lockwood, John S.: Observation on mode of action of sulfanilamide and its application to surgical infection, *Ann. Surg.*, 108:801, 1938.

8. *Military Surgical Manual V.: Chemotherapy, Burns, Shock and Vascular Injuries, Traumatic Wounds*, Saunders & Co., 1943. Pp. 186-187.

9. Ravdin, Isidor S., Rhodes, Jonathan E., and Lockwood, John: The use of sulphaniilamide in the treatment of peritonitis associated with appendicitis, *Ann. Surg.*, 111:53, 1940.

10. Mueller, Sterling, and Thompson, James E.: The local use of sulfanilamides in the treatment of peritoneal infections, *J. A. M. A.*, 118:189, 1942.

11. Bowers, Warner F.: Healing of wounds, *War Medicine*, 1942, Pp. 27-40.

SULFONAMIDES IN UROLOGY

W. A. REED, M. D.
NEW ORLEANS

Of all the various sulfonamide preparations used in urology, sulfathiazole and sulfadiazine, or their sodium derivatives, are the two principal ones. There is no doubt that these drugs have greatly improved the results obtained in the treatment of urologic cases, both surgical and otherwise, although present experience indicates quite clearly that none of them are absolutely innocuous, but may in certain individuals and under certain circumstances act as lethal poisons.

Generally speaking, the colon and pyogenic groups of bacteria are the ones on which their effect is most pronounced.

Individual susceptibility varies. I know of one patient in whom a single dose of ½ gram of sulfathiazole produced a temperature of 106° on each of the several occasions that it was tried.

Ambulant patients, and particularly young individuals, definitely tolerate the sulfonamides better than older ones, or those so weakened by illness, regardless of the nature, as to require them to be bedridden or hospitalized. As a proof of this fact it is my custom to give ambulant office patients, unless they are quite old, 4 grams of sulfathiazole daily for periods of from four to six weeks, and in only about 5 per cent of them is it necessary to discontinue the drug because of adverse reactions, most of which are trivial. However, in the treatment of more seriously ill individuals a number of definite rules should be observed.

Except under special circumstances, the dose of the drug should not be more than 1 gram every six hours, or the equivalent thereof. The fluid intake should be 3000

c. c. and the output never less than 1000 c. c. every 24 hours. An output lower than this constitutes a definite warning. A complete blood picture, non-protein nitrogen estimation, and if possible a P. S. P., should be done before or as soon as sulfonamide therapy is instituted. Should the white count drop to 5000, the red count to 3,000, 000 or under, or the non-protein nitrogen rise to any marked degree, the drug should be stopped or at least the dose decreased at once. Under such circumstances there will invariably be a diminution in the P. S. P. excretion as well. Sulfonamide blood levels of over 12 mg. per cent always bear careful watching. High blood levels occurring in patients who have received a comparatively small amount of the drug often indicate previously existing hepatic or renal damage.

Renal injury seems to occur more frequently from sulfadiazine than from sulfathiazole, although it may result from either. A rapid decrease in the urinary output is often followed by a complete suppression. Should this occur the drug must be discontinued at once, the patient given up to 5000 c. c. of fluids, either by vein or by mouth, every 24 hours, and alkalies administered. If this fails to restore renal function, cystoscopy with lavage of the renal pelvis is indicated promptly. Hemorrhage within the pelvis of the kidneys, crystal blocking of the convoluted tubules and complete destruction of the renal parenchyma has occurred following the administration of as little as 12.5 grams of sulfathiazole.¹

The sodium salts of either sulfathiazole or sulfadiazine may be, and are frequently given by vein or by hypodermoclysis. The dose by vein is rarely over 2 grams and 5 grams in 1000 c. c. of isotonic saline solution is suitable for subcutaneous administration.

The use of sulfonamides following cystoscopic procedures and office instrumentation has reduced the number of reactionary chills and fever to a minimum. The local application as well as the internal administration of the drug has greatly lessened the hazards of urologic surgery. The use of

solutions of these drugs in the local treatment of bladder or renal infections has not in my own experience, proved particularly beneficial, although gonorrheal vulvovaginitis in children seems to respond nicely to instillations of sodium sulfadiazine in a 2½ per cent solution.

The proper treatment of gonorrhea, in both the male and the female, in my opinion, requires local treatment as well as sulfonamides orally. Sulfathiazole in doses of 4 grams daily is the drug of choice. It has been stated that 19 out of 20 men are rendered non-infectious for gonorrhea by the administration of 20 grams of sulfathiazole.² This is not borne out by my own experience. While that amount of drug often does result in a complete or almost complete disappearance of the urethral discharge, and a belief on the part of the patient that he is cured, a large percentage of patients still harbor the infection which promptly recurs following provocative instrumentation, coitis or alcohol. There is no doubt that many innocent individuals have been infected by those who believed themselves cured by the use of one of the sulfonamides alone. While the length of treatment and the occurrence of complications in gonorrhea of both the female and male has been markedly decreased by the use of sulfonamides, one must not be misled by the usual rapid disappearance of visible signs of the disease nor be less careful in the final determination of a complete cure.

REFERENCES

1. Lindner, H. J., and Atcheson, D. W.: Sulfathiazole crystallization in the kidney, *J. Urol.*, 47:262, 1942.
2. Deakin, R., and Patton, J. F.: Sulfathiazole in the treatment of 200 cases, *J. Urol.*, 46:1043, 1941.

SULFONAMIDES IN GYNECOLOGY AND OBSTETRICS

CURTIS H. TYRONE, M. D.
NEW ORLEANS

Although it has been less than ten years since the publication of the initial investigations on the value of sulfonamides in combating infection, these drugs are now widely used in a variety of conditions which are treated by every specialist. It must be remembered that these derivatives should

be used only in those infections caused by organisms against which it has been conclusively proved that they have a specific effect. Thus, it can readily be seen that the administration of the sulfonamides as a prophylactic measure in obstetrics and gynecology is to be condemned. Experimental as well as clinical studies have shown that sulfathiazole is preferable to other derivatives for most infections because it has a specific action against a greater number of organisms, has a less toxic effect and is excreted more slowly. On the other hand, sulfanilamide has proved to be the best derivative for local application to infected surfaces. Chemotherapy, when selected, should be instituted early and administered systematically in adequate doses. Of course, the dosage should be controlled by frequent determinations of the concentration of the drug in the blood.

The use of the sulfonamides in gynecologic and obstetrical conditions may be discussed briefly under the following headings: (1) acute specific infections; (2) puerperal infections; (3) breast infections; (4) trichomonas infections of the vagina and (5) gynecologic surgery.

ACUTE SPECIFIC INFECTIONS

Ambulatory patients with acute local infections of the genital tract should be given 1 gram of sulfathiazole four times a day for three days, followed by 1 gram three times a day for two days. Following this medication, cultures and not smears should be made and, if virulent, specific organisms are found, the therapy should be repeated. Lankford and Cooke¹ suggest a *minimum* of six negative cultures at weekly intervals, including one or two post-menstrual cultures, before these patients are released from observation.

The local insufflation of sulfonamide powder in the vagina is of no value in the treatment of infections in the lower genital tract.

In cases of acute salpingitis of specific origin, the same dosage should be used as for ambulatory patients with acute local infection of the genital tract. The sulfa drug

acts best given within five days of the beginning of the infection. However, two points should be kept in mind: first, this drug has no effect after pus has collected, such as in cases of tubo-ovarian abscesses or of local collections of pus in the pelvis, and secondly, the basis of the treatment of acute infections of the pelvic organs is rest and supportive measures, such as transfusions, and the sulfonamides should be used only as an adjunct to this treatment.

PUERPERAL INFECTIONS

The sulfonamides have their greatest value in the treatment of puerperal infections. They have been of no benefit in combating postabortal and postpuerperal infections due to anaerobic cocci and staphylococci, because the pathologic condition in such cases is principally one of a thrombophlebitic process. However, the drug has a definite value in cases of septic abortion. Johnson and Talbot² recently reported a series of 44 cases of septic abortion in which the routine method of treating such cases was supplemented by the administration of an initial dose of 3 grams of sodium sulfathiazole by mouth, followed by one gram every six hours for five or more days. From a comparative study of this group of cases with those which did not have chemotherapy, they noted a definite reduction in the mortality rate.

BREAST INFECTIONS

It is generally agreed that the sulfonamides are advantageous in the prevention of abscesses of the breast. However, the drug should not be administered to any patient with painful engorgement of the breast during the first few days following delivery. After a period of time has elapsed, if painful nodules develop which suggest a localized or beginning general infection of the breast, the drug is indicated and in most cases will prevent abscess formation.

TRICHOMONAS INFECTION OF THE VAGINA

In my experience the sulfonamide compounds have been most unsatisfactory in the treatment of trichomonas infections.

GYNECOLOGIC SURGERY

For the past ten months I have used sulfanilamide powder on the closed vaginal

vault following total hysterectomy before peritonization of the operative field is completed. The drug is insufflated over the closed vaginal vault with a powder blower, rather than dumped into the cavity in a lump where it might accumulate as a foreign body. After peritonization has been completed, the powder is insufflated over the broad ligament structures and cul-de-sac. In the last 60 hysterectomies in which I have used sulfanilamide the morbidity has been reduced by one-half.

In operations for ovarian abscesses the local insufflation of the drug over the operative field is a distinct adjunct to the surgical treatment.

REFERENCES

1. Lankford, C. E., and Cooke, W. R.: A minimum bacteriologic criterion of cure of gonorrhea in women, *Am. J. Obst. & Gynec.*, 45:684, 1943.
2. Johnson, C. G., and Talbot, J. D.: The use of sodium sulfathiazole in the treatment of septic abortions, *Am. J. Obst. & Gynec.*, 45:846, 1943.

SULFONAMIDES IN OTOLARYNGOLOGY

WILLIAM A. WAGNER, M. D.
NEW ORLEANS

Since the discovery of prontosil as a chemotherapeutic drug by Gerhardt Domagk in 1935 more than 3000 related compounds have been synthesized and tested.

The disodium salt of prontosil called neoprontosil or sulfanilamide was shown to break down in tissues at the azo linkage into triaminobenzene and para-aminobenzene sulfonamide, the latter was assumed to be the effective pharmacologic portion of the molecule. Of the more than 3000 related compounds, only a few with the basic sulfanilamide molecule have shown chemotherapeutic activity, hence these few represent the sulfonamides.

In otolaryngology many of the sulfonamides have been used: (a) prophylactically; (b) to treat coccal diseases; (c) to prevent complications and extensions to the adnexa and (d) to treat complications. They are used systemically and locally—systemically by oral, intramuscular, intravenous and intrathecal medication—locally in the form of powders, ointments, jellies,

solutions, suspensions, in various solvents, as loose addition products mixed with allantoin, given in combination with arsphenamines and used with pressor drugs as the vasosulfa drugs.

In general the drug should be administered early, and because of the histologic structure of the organs of this specialty large doses should be given if bacteriostasis is to be accomplished. The dosage should be maintained until leukocytosis approaches normal, providing sensitivity to the drug has not developed or untoward complications have not occurred. Do not overdose the patient to a leukenoid state (agranulocytosis). The reticuloendothelial system, body immunity, fibroblasts, epithelial and ciliated epithelial cells are not affected when the drug is judiciously used and in proper strengths. In powder form or strong solution, it irritates mucosa, retards ciliary motility and is caustic because of its high pH 9-10. Excessive amount of powder cakes in wounds. Instilled into the nasal sinuses as a powder or suspension, it has remained as long as six to eight weeks, and is detrimental because of not being absorbed. The sodium salts in strong solutions are more caustic and will destroy cilia and epithelium. In weak solutions it is of questionable value.

When administered systemically, large doses must be given early while the blood stream is yet free of thrombi, and the bacteria are not surrounded by cellular infiltration and proliferation, so that the drug can be carried to the bacteria at the seat of infection within the tunica. Because the blood supply is distant to the lumen of the sinus, the middle ear and mastoid cells, which are other sites for the accumulation of organisms, little concentration is obtained and consequently poor bacteriostatic action is accomplished. The sinus and ear mucosa does not excrete the drug to the extent as does the kidney, consequently a therapeutic concentration is not obtained. The pus and debris which results from supuration contains peptone that also limits the action of sulfonamides. And lastly mucin secreted by mucosa is another great sul-

fonamide inhibitor. Consequently, it is understandable why sulfonamide therapy is limited in the treatment of ear, nose and paranasal sinuses. In lesions of the oral cavity, pharynx and larynx these handicaps are aggravated by physiologic factors such as swallowing, salivation, and hawking. These factors prevent the drug from remaining on the affected surface in spite of the fact that in these areas, stronger preparations can be applied because of the more resistant non-ciliated epithelium.

Sulfadiazine, when systemically administered, is the drug of choice. It is acetylated less than other sulfonamides and therefore less liver damage is to be expected. It is conjugated into acetyl sulfadiazine which is the most soluble and excreted more easily by the kidney, thus less fear of kidney concretions. Penetration of cerebrospinal fluid has been excellent. There is little nausea and vomiting, and it affects all cocci. Locally the drug of choice should be predicated on the bacteriologic study, individual sensitivity and personal experience.

It is unwise to use massive doses of local anesthetics as procaine and the frequently used topical anesthetics as cocaine, pontocaine and metycaine, because para-aminobenzoic acid is another sulfonamide inhibitor. Likewise in the early administration of sulfonamides, vitamin B complex should be discouraged. Later in the treatment, particularly on the first evidence of the development of a leukenoid state, vitamin B complex should be given because of its folic acid content which may prevent agranulocytosis.

Biotherapy in conjunction with sulfonamides when possible should always be considered. Specific sera and other adjunct measures should not be neglected. Always be on the alert for toxic manifestations of the drug. And in cases not responding rapidly, suspect the development of a sulfonamide-fast organism. This is important because of the malicious indiscriminate abuse of the drug in nasal and systemic administration. Not only may a sulfonamide-fast organism occur, but sensitivity to the drug may develop with the production of an al-

lergic state. There is some conjecture among otolaryngologists as to the possibility of creating an epidemic of a sulfonamide-fast organism.

The sulfonamides should neither be expected to cure circumscribed suppurations within soft tissues nor walled off suppurations within bony cavities. Middle ear abscesses, and empyemias of the sinuses require surgical intervention. Nevertheless, there is no objection to these drugs given prophylactically in such existing circumstances.

In otolaryngology the sulfa drugs have been used for practically all diseases and complications affecting the ear, nose and throat. They have been used in the treatment of the "common cold," sore throats, after tonsillectomy, tracheotomy, before, during and after laryngectomy, acute and chronic sinusitis, the various diseases of the external ear, the various types of acute and chronic otitis media and mastoiditis, laryngitis, acute laryngo-tracheo-bronchitis and bronchiectasis. They also have been used postoperatively in wounds after mastoidectomy, paranasal sinus surgery, petrossectomy, and fenestration operations upon labyrinth. In some instances they have been used to advantage in such complications as osteomyelitis of the cranial bones, lateral sinus thrombophlebitis, meningitis and brain abscess.

A review of the various methods, type of drug and dosage used, and the results obtained therefrom cannot be summarized. This is primarily due to the limited literature upon the subject much of which has failed to demonstrate conclusively the usefulness of these drugs. Nevertheless otolaryngologic cases so treated conclusively fall into two groups:

Group 1. Those in which the sulfonamides are known and proved to be effective, such as in meningitis, thrombophlebitis of the lateral sinus with septicemia and streptococcic sore throat.

Group 2. Those in which the drug is not known but *presumed* to be effective, such as the "common cold," "la grippe" and chronic sinusitis.

In the treatment of nasal and paranasal sinus diseases, it has been almost universally discovered that in the "common cold," chemotherapeutic agents are substantially without influence. More enthusiasm has come forth in the literature on the treatment of paranasal sinusitis. Many sulfa drugs and combinations have been advocated.¹ The following is a list of the sulfonamides which have been used:

- I. Sulfa drugs, systemically
 - (a) Sulfanilamide
 - (b) Sulfadiazine
 - (c) Sulfathiazole
 - (d) Sulfapyradine
 - (e) Sulfamethyldiazine
 - (f) Sulfamerazine
 - (g) Sodium salts
- II. Sulfa drugs, locally
 - (a) Sodium salts in solution
 - (b) Suspension (microform crystals 5 and 20 per cent)
 - (c) Jelly
 - (d) Vasosulfa drugs (sulfonamide combined with a pressor drug)
 - (1) Sulmefrin (2.5 per cent sulfathiazole and 0.125 per cent dl-desoxyephedrin hydrochloride)
 - (2) Sulfedex (same as above)
 - (3) Sulfamone (same as above)
 - (4) Thizodrin (same as above)
 - (5) Sulfathiazole—Paredrine suspension (5 per cent of microcrystals of sulfathiazole in a 1 per cent aqueous solution of paredrine hydro-bromide; suspension pH 5.5)
 - (e) Loose addition product. Sulfallantoin (a powder of sulfathiazole and allantoin). The allantoin is added to destroy the sulfonamide inhibitor (peptone) and to favor fibroblastic and angioblastic formation.
 - (f) Solvents, in
 - (1) Triethanolamine
 - (2) Propylene glycol
 - (3) Glycerine
 - (g) Gum (sulfadiazine in paraffin)
 - (h) Lozenges
- III. Sulfa drugs given with neoarsphenamine

This list of the variety of drugs is in itself some indication of the unsatisfactory results obtained in the therapy of otolaryngologic diseases, especially sinusitis. In spite of this fact new and more combinations should be investigated with the hope that better results may be accomplished.

The sulfa drugs systemically and locally used in sinusology have been limited by the concepts mentioned previously in this discussion. My results have not been as promising as those of Turnbull with desoxyephedronium sulfathiazole a vasosulfa drug, better known under the names of sulmefrin, sulfamone and thizodrin. Its pH 8.6-9, more alkaline than the nasal pH, yet what is the normal pH? It is said to be pH 5.5-6.5 and this is still debatable. It is isotonic and yet many of us believe a slightly hypertonic solution is more ischemic to turbinal tissue. It is true of the synergistic vasoconstrictor effect of the combination of the two drugs in which the 1/8 per cent didesoxyephedrin hydrochloride in 2.5 per cent sodium sulfathiazole is as effective as a vasoconstrictor as 1 per cent aqueous didesoxyephedrine hydrochloride. It is true the drug is not irritating and does not affect ciliary motility, does not injure mucosa and is a stabilized solution. In view of these facts, it has not proved itself to be an effective bacterial agent in the treatment of nasal and paranasal sinus disease up to now, in so far as my experience is concerned. It has been used by me as sprays and instilled into the sinuses with no startling results.

Sulfathiazole 5 per cent microform crystals in 1 per cent paredrine hydrobromide also has been used by me as sprays, and instillations within the sinuses with far from satisfactory results, although L. D. Sulman of Philadelphia reported its use in over 75 cases of rhinitis and sinusitis, in which he states it shortens the course of infection and averted sequelae to colds. L. E. Silcox and H. P. Schenck of Philadelphia report that the microcrystals are removed from sinus cavities within four or five days, either by ciliary movement or by absorption. It has been my experience that the drug has remained as long as eight weeks, at which time some of it was removed by lavage.

B. S. McArthur, Los Angeles, uses a sodium sulfathiazole jelly in the treatment of colds in which relief was obtained in every

instance except one out of 2000 patients treated.

The drug used in solvents has not been very satisfactory because of the irritating effect of the solvents on mucosa. This is particularly true of propylene glycol. Glycerine, propylene glycol and triethanolamine are the most frequently used. One may well recall the toxic effect of one of the earlier solvents used which resulted in a great tragedy, diethylene glycol. J. E. Bradley and S. J. Crowe, of Baltimore, have recommended the use of 2.5 per cent sulfadiazine in triethanolamine solution as instillations in the nose for colds and found it to prevent ear and sinus complications. Twenty c. c. were used daily as spray of nose and pharynx, eight times daily for the first day, five times daily for three or four more days.

In tonsillitis, pharyngitis and the postoperative treatment of tonsillectomy, sulfagum (sulfadiazine in a paraffin block of suitable size for chewing) and lozenges containing sulfadiazine have been used by J. H. Arnett of Philadelphia.

Various sulfa drugs have been used to advantage as a powder about the tracheotomy, laryngectomy and mastoid wound. It is also advantageous in petrosectomy and fenestration operations on the labyrinth and extirpation sinus surgery.

In otology the sulfonamides may contribute towards the prevention of otitis media when given in early upper respiratory infections, although it will neither cure an acute suppurative otitis media nor a surgical mastoiditis. The sulfonamides will not supplant surgery. In acute otitis media one of the problems which may confront the otologist is that of masking of symptoms. In such cases the drug may have to be discontinued or frequently repeated ra-

diographs made. The usual sepsis indicators, temperature and leukocyte counts are of no avail. Occasionally a drug reaction may be confusing from the standpoint of an otitic complication and this may be an even more difficult problem. In acute otitis media the sulfa drugs have justly merited their use in the prevention of mastoiditis. They are of no value in chronic suppurative otitis media with attic or ossicular necrosis and chronic mastoiditis with or without cholesteatoma. The sulfa drugs have failed because surgical intervention is imperative. Sulfallantoin in the treatment of selected cases of chronic otitis media may have value because of its anti-inhibitory effect upon peptone.

In laryngology the drugs have been used as insufflations, in suspension with and without the vasoconstrictors as sprays, instillations in the form of "smoke" spray inhalations in laryngitis, laryngo-tracheobronchitis, chronic bronchitis and bronchiectasis. Favorable reports are yet to be forthcoming.

The use of sulfonamides in conjunction with arsphenamines as reported by Asgoud and Moore may be of value in deep cervical, parapharyngeal and retropharyngeal abscess particularly when due to Vincent's organism, associated with a streptococcus or another coccal organism. Some of the otitic and rhinologic complications, lateral sinus thrombophlebitis, meningitis and osteomyelitis of the cranial bone have been undisputedly benefited by local and systemic administration. Osteomyelitis due to an anaerobic organism requires immediate surgical intervention. The wound should be layed wide open and zinc peroxide packs or stayogen packs should be introduced at the beginning, following later by a sulfonamide powder.

NEW ORLEANS Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

C. C. deGravelles, M. D., Ex officio
For one year: Lucien A. LeDoux, M. D., Chairman
H. W. Kostmayer, M. D., Secretary
For two years: James K. Howles, M. D.
For three years: G. C. Anderson, M. D.,
Vice-Chairman
Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D. *Editor-in-Chief*
Willard R. Wirth, M. D. *Editor*
Daniel J. Murphy, M. D. *Associate Editor*

COLLABORATORS—COUNCILORS

Edwin L. Zander, M. D.
J. T. O'Ferrall, M. D.
Guy R. Jones, M. D.
T. B. Tooke, Sr., M. D.
George Wright, M. D.
Rhett McMahon, M. D.
C. A. Martin, M. D.
W. F. Couvillion, M. D.
Paul T. Talbot, M. D. *General Manager*
1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

THE ANNUAL MEETING

Again editorially we will call your attention to the coming meeting of the Louisiana State Medical Society. This year the officers of the State Society have decided to go back to the holding of the scientific meeting as well as a business session. This is, we believe, very definitely an excellent decision. Even in spite of war and the overworking of the medical profession, nevertheless a scientific meeting will bring the doctors up to date in things medical and surgical, and will refresh and reburish their minds.

The two day scientific session will allow for an excellent program. The program will be constructed somewhat differently this year than previous years, and the efficient secretary-treasurer has arranged with the chairmen of the different sections to get outstanding speakers and to have rather complete expositions on the subjects which the essayists will present to the organization. We are sure that the scientific program will be very well worth hearing.

In the past we have called attention to the advisability of attending these meetings, and what we have said in the past holds with greater force now than ever before. Not only do the members of the State Society have the opportunity of freshening up on their knowledge of contemporary medicine, but to them also is afforded an opportunity of getting away from the office and leaving the ubiquitous telephone to its own devices. We know that all doctors in Louisiana are doing double duty and that the demands on their time are overwhelming, but we urge them to get away for a few days for rest and relaxation and to obtain scientific information. Certainly the change from their every day duties even for two or three days will make a break of inestimable value to the doctors themselves, and indirectly to their patients. We sincerely hope that this next meeting, which will be held on April 24-26, will have a larger attendance, in spite of the reduction in the number of doctors in the state due to the military exigency, than have ever before attended the state meeting.

THE WAGNER BILL

The Council on Medical Service and Public Relations is sending out weekly bulletins relative to the activities and trends in medical affairs and medical legislation. In the last bulletin a speech of Dr. Wilburt C. Davison, Dean of the Duke University School of Medicine, which was delivered at the recent meeting of the Congress on Medical Education and Licensure, is quoted. Dr. Davison says that the physicians need more advertising, not as an individual but as a

group of professional men who are to say the least being treated rather roughly by socialistic demagogues. Such advertisement can be obtained indirectly through editorials in local newspapers, for example. A copy of an editorial from a North Carolina paper, backing up Dr. Davison's contention, was distributed by the Council on Medical Service and Public Relations.

Our suggestion is that too much dependency must not be placed on the officers of medical societies to defeat the Wagner Bill, but that this bill is more likely to be beaten by the cooperation of an entire medical profession. The individual doctor can talk to the editor of his local morning or evening paper and he can ask him to dilate upon the evils of socialized medicine, speaking to him as a friend, whereas an officer of the state organization may have little influence on the editor, who does not know him, except by reputation. If the individual doctor will, in his locality, express his dislike and his disapproval of the Wagner Bill to the editor of his local journal, and give to him information of the malignant influence that this bill would have on the medical profession should it become enacted, and the harm that it would do to the people of the country, we feel quite sure that this would be a contribution of great value, particularly when multiplied many times not only throughout the State of Louisiana but throughout the country as a whole.

BACK UP OUR ADVERTISERS

Members of the Louisiana State Medical Society probably do not realize that the journal is financed very largely through the monies received from advertisers in its columns. It is the advertisers who make possible to a very great extent the publication of the state medical journal. It seems only fair that these firms who advertise in the journal should receive the backing of the state profession. This is not a plea necessarily to make use only of the pharmaceutical preparations, books, surgical implements and what not that are advertised in the journal, but when there is no choice or little choice between one or the other of the pharmaceutical preparations for ex-

ample, why not make use and prescribe those that are advertised in the journal? Furthermore, when detail men visit the doctor why not tell them that their advertisements are seen and read, but if these detail men represent firms who do not advertise in our journal, why not put in a good word for the journal.

An example of the almost total lack of cooperation by the physicians of states other than Louisiana, is a recent communication from the Cooperative Medical Advertising Bureau which places the great bulk of advertising that appears in state medical journals. The Cooperative Medical Advertising Bureau asks us to encourage our readers to take advantage of the medical preparations that are advertised in the journal, and also to take advantage of offers that are made in the journal. They give as an example of lack of cooperation a letter that was received from an advertiser who advertises in twenty-three different state medical journals, and who is cutting down materially on his advertising because the firm has had few responses from the doctors in the states in which they advertise. This particular advertiser has a coupon which he asks the doctor to fill out and to return to the advertiser, who in turn will send further information about the apparatus which is advertised. Two of the state journals elicited no inquiries at all from their readers, and most of them such a small number that the advertising is being taken away from the journals. Would it not be possible when such requests appear as they do from time to time in the New Orleans Medical and Surgical Journal, that you the medical reader could have your secretary or nurse cut out such a coupon, fill it out, and send it to the advertiser. This will certainly show some interest at least in the advertised material or apparatus.

We realize that when a physician is working eighteen hours a day he does not have much time to look over medical journals, and we know that this is a bad time to make a request such as we have done in the preceding paragraphs. Nevertheless we would like to point out once again, and to stress

the statement first made, namely, that the advertisers are responsible for a large part of the cost of medical publications, and that as loyal members of the State Society we should do our best to cooperate with those who make possible our state publication.

NEPHRECTOMY IN HYPERTENSION

When, from the experiments of Goldblatt it became well known by the medical profession that a clamp applied to the renal artery of one kidney could produce hypertension, physicians everywhere began a still hunt for unilateral renal lesions in patients who had hypertension, motivated by the thought that removal of the offending kidney would cure the hypertension. For a period of time, it seemed that every patient who had elevated blood pressure was subjected to very careful functional kidney studies in order to find out if there was involvement of only one kidney, and if such involvement was found, that kidney was promptly removed.

The wave of enthusiasm that so often follows any new development in medicine has gradually subsided to a ripple. Physicians, urologists, are finding that while often a temporary reduction in blood pressure followed unilateral nephrectomy, eventually, in a comparatively short time, the pressure went back to the previous levels, or even actually increased. Consequently, the enthusiasm subsided to such an extent that only occasionally is the operation performed.

Sensenbach* reports on a small group of

*Sensenbach, Willis: The effects of unilateral nephrectomy in treatment of Hypertension, Arch. Int. Med., 73:123, 1944.

patients whom he has observed in the Bowman Gray School of Medicine and analyses the history of 75 patients with hypertension, taken from the literature, who were operated upon by the removal of one kidney. He states only 5 of these 75 patients met the requirements for possible cure after nephrectomy. In most of these patients, the most frequent pathologic condition was a chronic pyelonephritis. The author states that it is only an occasional patient in whom unilateral nephrectomy is indicated for hypertension and that these patients should be studied carefully and selected with acumen. This is especially important in those individuals who have a kidney which retains some functions, as the removal of this organ is likely to increase, rather than improve the hypertension.

Sensenbach gives the following criteria on which to base a selection of a patient who has hypertension who would be benefited by nephrectomy. These criteria are:

- "1. The diseased kidney should be functionless or its function greatly diminished.
- "2. The opposite kidney should function normally.
- "3. The hypertension should be of short duration.
- "4. Other factors being equal, the younger the patient, the greater the chances of favorable results following nephrectomy."

The author adds the statement that even though these criteria are fulfilled, there is no certainty that good results will be obtained, but certainly, at least if they are followed, the hypertension will not be made worse as a result of nephrectomy and relief may be obtained.

ORGANIZATION SECTION

The Executive Committee dedicates this page to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

FUTURE MEDICAL PLANS

It was thought that the members of the Louisiana State Medical Society would be interested in learning some of the observations made at a recent conference in Chi-

cago by our secretary-treasurer. These remarks do not represent in any way his opinion or those of the State Society, but merely is an informative report to present the trends and thoughts of the day as

gleaned from these important medical conferences. These groups met in Chicago from February 12-16 inclusive.

On February 12 the Midwinter Conference on Pre-Paid Medical Service Plans met. This council has been sponsored more or less by groups of physicians in and around Kansas City. Their objects and purposes were to develop independently some service plan which would be acceptable to various states and localities. They had a wonderful program, highlighted by talks from Mr. John Pratt of the National Physicians Committee, Dr. Rufus Rorem of the Hospital Service Plan Commission of the American Hospital Association, and others.

On February 13 there occurred the National Conference on Medical Services. This organization has been in existence since 1926, and has performed wonderful service to the medical profession in bringing to their attention many questions concerning medical service in this country.

On February 14 and 15 there was a meeting of the Congress on Medical Education and Licensure. This program was sponsored by the Council on Medical Education and Hospitals of the American Medical Association. The program was very illuminating and was presented by very capable physicians on subjects concerning our present status in regard to medical education and vital subjects of postwar planning. Fused with the program was the Federation of State Medical Boards which for a number of years has contributed toward the solidity of the standards of medical practice over the entire United States. It was very gratifying to notice here the activity and influence of Dr. Roy B. Harrison, Secretary of our State Board of Medical Examiners. Certainly from this approach we can have reasons to be assured of continuous protection to the medical profession in our state along the high standards evidenced in the past.

The Council on Industrial Health of the American Medical Association held their meetings on February 15 and 16. Their program more or less was of problems concerning the changes in the industrial life of the nation and resulting in the necessity of

closer observation in the prevention and care of industrial workers. With this committee's guidance the industries of this country have become conscious of the necessity of rearranging their medical service to take care of these changing conditions. Their work will certainly grow in usefulness and be a cardinal factor in postwar medicine.

The following doctors from New Orleans also attended: Dr. H. W. Kostmayer, Dean of the Tulane Medical School, Dr. B. I. Burns, Dean of the Louisiana State University Medical School, Dr. J. H. Musser, member of the Council on Medical Education and Hospitals of the American Medical Association, and Dr. Roy B. Harrison, Secretary of the Louisiana State Board of Medical Examiners and Past President of the Federation of State Medical Boards.

This was one of the strongest and most impressive gatherings of medical men probably ever assembled for such purposes. Many came with sincere determination to listen and learn. Others gave freely of their knowledge to those in attendance. The meetings were well conducted with liberal discussion of important subjects. There was a distinct evidence of simplicity, calling a spade a spade, and frequently one heard criticisms and sometimes praise for the accomplishments of different medical groups or organizations. There was a wonderful realism of interest displayed by doctors, and the unusual attendance implied *great interest in trying to secure adequate information on present and postwar planning*. There was a determination to review the mistakes that have been made and to try to rectify them to our advantage in the future. Although we know that the transportation facilities were not normal and hotels were packed and jammed with reservations, yet the attendance at these meetings was an *implication of the interest of the medical profession of this country*.

One can readily observe that I am of the opinion that the medical profession of this country is acutely interested and determined to solve the present day problems confronting them. This observation was gathered

not merely by listening to the presentations of the different speakers, but through personal contact and pseudo-round table discussions with important groups from different parts of the United States who are conversant with the many problems they have faced, either in failure or success in attempting to solve the medical problems. I was awakened to an optimistic view for the future of medicine by the concentrated efforts and accomplishments over the country. There were representatives of the eleven northwestern states who had grouped themselves together during the past few months in order that they might be able to carry on special functions. The principle one was to evolve a bureau of information in Washington, D. C., a bureau with a two way function, carrying information to Washington to every member of Congress and officers, and bringing back to the medical profession pertinent information and data from our capital.

We also saw there the determined and independent group from Indiana, American Association of Physicians and Surgeons of America, founded by the physicians of Lake County Society. This organization proposes to boycott federal medicine by preventing its members from practicing under any federal plan that may be imposed upon them, and other functions. It was my privilege to talk with the executive secretary of the state society and some of the men who figured in the planning of this new medical society for material economic benefits to the medical profession.

Then we were permitted to listen to the plan of the northeastern states. Out of all of this there was some predominating factors that were emphasized throughout the conference, namely, first, that it was apparently evident that Senate Bill Number 1161 would not be passed by this Congress; second, that following termination of war activities this plan of social security would be renewed with vigor as a postwar measure. The medical profession was admonished not to relinquish their activities, not only in efforts to defeat this bill but carrying to the people the advantages of present

American medicine. If the medical profession does not act to solve these problems, then we can expect again renewed activity to take over the practice of medicine by the federal government, the insurance companies, the Blue Cross plans, etc., and thus removing the solution of problems entirely from medical supervision.

The total attendance at these conferences was in the neighborhood of 1,500 doctors, and a great many others from allied groups.

Observations made at these conferences were as follows:

1. There was a serious determination to have defeated the proposed Senate Bill Number 1161. From all indications this will be accomplished.

2. To maintain in Washington, D. C. a two way medical bureau. A lot of emphasis was placed upon this particular function of organized medicine. Since these meetings, the Council on Medical Service and Public Relations of the American Medical Association has agreed to establish an office in Washington. Their functions, objects, and limitations will shortly be pronounced through official channels.

3. The widespread discussion for the establishment of some voluntary pre-payment insurance which they regarded as a duty and function of physicians not of the federal government. This might be regarded as a kick back from the Wagner Bill as a means of supplying medical service to low income groups. There was considerable discussion of plans, applications of medical service, and an outright expression of opposition to any form of pre-payment medical insurance. As a result of this discussion, there was evidenced a need for creating and making available to the various state societies the results of various pre-payment medical plans in order that the subject should be accorded consideration.

4. There was a distinct criticism of the American Medical Association for not taking a more leading part in the development of a medical bureau in Washington.

5. A comprehensive study of postwar medicine in re: medical education, relocation of physicians in critical areas, and the

preservation of high medical standards by the Federation of State Medical Boards.

6. Outstanding in these conferences were the forcible talks by the Honorable Walter H. Judd, Congressman from the Fifth District, Minnesota, an M. D., who was vitally concerned in helping the medical profession as far as possible in their problems, and especially in regard to legislation emanating from Congress. The Surgeon General of the Army, the Surgeon General of the Navy, the Surgeon General of the

Public Health Service, and Dr. Martha M. Eliot, Director of the Medical Service of the Children's Bureau, honored the meeting with their attendance and presentation of valuable contributions.

You can gather from this relation of observations the importance of these conferences, and the secretary-treasurer of the State Society was particularly grateful for this opportunity, and returned feeling greatly enhanced in knowledge concerning medical problems, and broadened in concepts concerning the solutions of same.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

- April 3. Board of Directors, Orleans Parish Medical Society, 8 p. m.
- April 4. Eye, Ear, Nose and Throat Staff, 8 p. m.
- April 5. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 1:30 p. m.
Mercy Hospital Staff, 8 p. m.
- April 6. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
Executive Committee, Baptist Hospital, 8 p. m.
- April 10. Scientific meeting, Orleans Parish Medical Society, 8 p. m.
- April 12. Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.
Touro Infirmary Staff, 8 p. m.
Women's Auxiliary, Orleans Parish Medical Society, Orleans Club, 3 p. m.
- April 13. New Orleans Hospital Council.
- April 17. Hotel Dieu Staff, 8 p. m.
Clinico-pathologic Conference, Baptist Hospital, 8 p. m.
- April 18. Charity Hospital Medical Staff, 8 p. m.
- April 19. Clinico-pathologic Conference, Charity Hospital Morgue Amphitheater, 130 p. m.
Charity Hospital Surgical Staff, 8 p. m.
- April 20. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- April 21. I. C. R. R. Hospital Staff, 12:30 p. m.
- April 25. Baptist Hospital Staff, 8 p. m.
- April 26. Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.
French Hospital Staff, 8 p. m.
Catholic Physicians' Guild, 8 p. m.
- April 27. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
DePaul Sanitarium Staff, 8 p. m.
- April 28. L. S. U. Faculty Club, 8 p. m.
New Orleans Hospital Dispensary for Women and Children Staff, 8 p. m.

During the month of March the Society held one regular scientific meeting. The program was presented by members of the LaGarde General Hospital. Col. Albert Upshur, Commanding Officer of the Hospital presided. Penicillin, Case Report by Capt. Wm. B. Thorning, M. C.; Coccidiomycosis: (a) Clinical Aspects by Major John B. Plum, M. C.; (b) Case Presentations, Demonstrating Various Manifestations by Capt. Nathan Schaffer, M. C.; False Positive Serologic Test by Lt. Col. Sloan J. Wilson, M. C.

Dr. John M. Whitney recently attended a United States public health institute meeting in Atlanta.

Dr. George F. C. Fasting spoke on "Burns and Their Treatment" at a recent meeting of the Delta Society of Safety Engineers.

Dr. Urban Maes has been appointed to a subcommittee of the Eighth Naval District's Manpower Survey Committee. This special subcommittee is concerned with problems of hospital and medical facilities.

Dr. Frank L. Loria has been elected chairman of the Surgical Section of Charity Hospital.

Dr. Henry D. Ogden attended the sixth annual Forum on Allergy in St. Louis.

Dr. Hilliard E. Miller attended a recent meeting of the American Gynecological Club, of which he is president, in Philadelphia.

Dr. E. Carroll Faust delivered the Smith-Reed-Russel Lecture at George Washington University.

Daniel J. Murphy, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

DR. CHARLES C. deGRAVELLES

Dr. deGravelles, president of the Louisiana State Medical Society, was born on Point Pleasant Plantation, November 21, 1883. He went to school in New Orleans, attending Rugby Academy, and then entered Tulane to obtain his degree of Doctor of Medicine in 1910.

Dr. deGravelles' initial location was in Patterson, Louisiana. He then moved to Morgan City where he remained until 1934 when he again changed his place of practice, moving to New Iberia where he has remained ever since, devoting most of his attention to internal medicine.

Our president has held many other offices in organized medicine of Louisiana. At one time he was president of the St. Mary Parish Medical Society and the Third District Medical Society. He served as councilor of the Third District from 1929 up until the time that he was selected as president. In 1927 he was made vice-president of the State Society. He served efficiently as chairman of the Committee on Medical Economics for several years.

Dr. deGravelles has been active in civic and educational activities. At one time he was president of the St. Mary Parish Board of Health, and he served on the school board of his parish. He was president of the Peoples State and Savings Bank in Morgan City, and he was a past president of the Rotary Club of New Iberia. He was also elected coroner of Iberia Parish and examining surgeon of the Southern Pacific Railroad. He has given much time to examining and classifying draft registrants. It should be noted that Dr. deGravelles is a member of the Phi Beta Phi Medical Fraternity, and a Fellow of the American College of Physicians.

We would like to repeat what we wrote last year.

"It is obvious that Dr. deGravelles has led a busy, active, and useful life. His interest has not been

confined to medicine and the practice of medicine, but he has been a tremendous force for the betterment of the people of the parishes and cities in which he has lived. The broadmindedness of the new president, his loyal service to organized medicine in the past, and his wonderful character should make him an outstanding president of the State Medical Society."

The forecast that was made in the above paragraph has proved to be true. Dr. deGravelles has given loyally of his time to the State Medical Society, and has made himself one of our outstanding presidents.



DR. C. C. deGRAVELLES

FELIX JOEL UNDERWOOD

The annual orator of this year's State Medical Society meeting will be one of the most distinguished members of the medical profession of our sister state, Mississippi. Dr. Underwood needs no introduction to members of the Louisiana State Medical Society. He is known by many of them personally and by all of them by reputation.

Dr. Underwood has had a distinguished career in his chosen field of public health. He became interested in this subject when he served, shortly after graduation from the University of Tennessee, as a part time health officer in Monroe County, Mississippi. He then became full time director of this county health department and then was called to Jackson, the central office of the Mississippi State Department of Health. He became state health officer of Mississippi in 1924, a position which he still holds.

In addition to his present position, he serves and has served on many committees and boards. For example, he is one of the trustees of the Mississippi State Tuberculosis Sanatorium and of the Mississippi Children's Society. He has been at various times on the Board of Scientific Directors of the Rockefeller Foundation, a member of the Public Health Committee of the Commonwealth Fund, a member of the Planning Committee of the Conference on Children in a Democracy, as well as serving on innumerable other important committees and boards.



DR. FELIX J. UNDERWOOD

Dr. Underwood was president of the Southern Medical Association a few years ago. He is also a past-president of the Mississippi State Medical Association as well as president of the Southern branch of the American Public Health Association.

The State Society is fortunate in having this distinguished Mississippian to be its annual orator. He is a man of charming personality and a speaker of repute and fame. That which he will have to say to the Society will undoubtedly be something well worth hearing.

THE 1944 ANNUAL MEETING

This year we expect to have a very fine convention which will be a combination of a high grade scientific program and a number of opportunities to enjoy friends in amicable and social gatherings.

The Scientific Program, which is shown elsewhere in this issue of the Journal, is curtailed to sixteen papers and their discussions. This curtailment was made necessary because of the fact that our convention will consist of only two days of scientific papers as against three such days at former conventions. The papers will be limited to twenty minutes' reading time, with five minutes allowed for the first discussion and three minutes for the second and subsequent discussions. The Committee on Arrangements will insist upon the time schedule for the reading and discussions of the various papers. The Scientific Program is a varied and interesting one and will prove profitable to all of us.

We are arranging a Buffet Luncheon for the Members of the House of Delegates on Monday, April 24, 1944 at noon. In spite of war time restrictions, we will have a nice luncheon, without a whole lot of fancy trimming, for one must remember that we are at war and must not expect any more than our just share.

On Tuesday, April 25, 1944 we will have a luncheon for the whole membership, with the opportunity to sit and lunch with our friends. On Wednesday, April 26, 1944 there will also be a luncheon for the membership. By the way, it will not be necessary to bring your ration stamps.

On Tuesday evening, April 25, 1944 starting at 8 p. m., we shall have the President's address. The annual orator this year is a man who is well known to most of us and has earned a just reputation for being an eloquent and fluent orator. It is an honor for the Louisiana State Medical Society to be fortunate enough to have Dr. Felix Joel Underwood of Jackson, Mississippi, for our annual orator.

One of the most impressive features of our conventions has always been the love and reverence shown for dead members. This year the In Memoriam will be delivered by our own Dr. James Quintus Graves of Monroe, Louisiana, who is es-

pecially qualified in reverence and feeling to render an inspiring address of this nature.

Arrangements have been made for the golfers, so bring along your old favorite clubs (if you cannot play without them). Clubs may be procured at the links, if necessary. Dr. Ashton Thomas is in charge of the golfing activities and you must come out and show the boys how golf should be played. Oh, yes! Prizes galore!

The Women's Auxiliary to the Louisiana State Medical Society has arranged a very fine program which is shown elsewhere in this issue of the Journal.

The Louisiana Coroners' Association will have its annual meeting at a luncheon at midday Tuesday, April 25, 1944. Dr. Charles Barker is president and Dr. C. Grenes Cole is acting as chairman for this luncheon-meeting.

Dr. Emmett Irwin reports that the Past Presidents will have their annual dinner on Monday evening, April 24, 1944.

For those who are interested in the Library of the Orleans Parish Medical Society and historical medical books, there has been arranged a wonderful display of these books in the Library at 1430 Tulane Avenue. Miss Mary Louise Marshall, the Assistant Librarian, will be very happy to act as personal guide and commentator on this worthy display on Monday afternoon, April 24, 1944, and Wednesday afternoon, April 26, 1944.

Now, the "piece de desistance" in the social way, will come on Wednesday evening, April 26, 1944, beginning at eight o'clock. Then we will dance and dine at the Annual Banquet which will be the finale of our convention.

It is the earnest wish of the Committee on Arrangements to have a very large attendance at this war time convention so that the membership may come to hear excellent scientific papers and revel in the company of old and new friends and return home greatly refreshed in mind and body.

Here's to a large attendance!

PROGRAM OF 1944 ANNUAL MEETING

Section on Medicine and Therapeutics

Dr. J. H. Musser, New Orleans, Chairman

1. The Causes of Syncope with Special Reference to the Heart—Dr. W. A. Sodeman—Dr. H. T. Engelhardt, New Orleans. To open discussion—Dr. H. T. Engelhardt, New Orleans.

2. General Considerations of Brucellosis—Dr. Harry J. Schmidt, Convent. To open discussion—Dr. Robert G. Lowe, New Orleans.

Section on Pediatrics

Dr. S. George Wolfe, Shreveport, Chairman

1. The Importance of Recognizing the "Border-Line" Case in Pediatrics—Dr. Clarence H. Webb—Dr. S. George Wolfe, Shreveport. To open discussion—Dr. Julian Graubarth, New Orleans.

Section on Nervous Diseases

Dr. H. Randolph Unsworth, New Orleans, Chairman

1. The Physician-Patient Relationship — Dr. Theodore A. Watters, New Orleans. To open discussion—Dr. Douglas L. Kerlin, Shreveport.

Section on Bacteriology and Pathology

Dr. Maurice Couret, New Orleans, Chairman

1. Food Poisoning—Dr. George H. Hauser, New Orleans. To open discussion—Dr. Waldo L. Treuting, New Orleans.

Section on Public Health and Sanitation

Dr. David E. Brown, New Orleans, Chairman

1. Clinical and Epidemiological Features of an Epidemic of Severe Pneumonitis in Southwestern Louisiana—Dr. Waldo L. Treuting—Dr. Byron J. Olson, Bethesda, Md. To open discussion—Dr. Arthur Vidrine, Ville Platte.

Section on Gastro-Enterology

Dr. Donovan C. Browne, New Orleans, Chairman

1. Psychosomatic and Medical Aspects of Peptic Ulcer—Dr. Robert A. Katz, New Orleans. To open discussion—Dr. A. A. Herold, Shreveport.

Section on General Surgery

Dr. Daniel J. Murphy, New Orleans, Chairman

1. Rupture of Intervertebral Disk—Dr. John A. Lane, Surgeon, United States Public Health Service, New Orleans. To open discussion—Dr. Dean Echols, New Orleans.

2. Further Observations on Carcinoma of the Stomach in a Large General Hospital—Dr. F. F. Boyce, New Orleans. To open discussion—Dr. Walter Moss, Lake Charles. Followed by—Dr. Joseph Heard, Shreveport.

Section on Gynecology and Obstetrics

Dr. J. W. Reddoch, New Orleans, Chairman

1. Pelvic Inflammatory Disease—Dr. William L. Bendel, Monroe. To open discussion—Dr. T. B. Sellers, New Orleans. Followed by—Dr. John Dicks, New Orleans.

2. The Role of Roentgen Pelvimetry in the Management of Pelvic Contraction—Dr. E. L. King, New Orleans. To open discussion—Dr. J. N. Ane, New Orleans. Followed by—Dr. J. D. Talbot, Shreveport.

Section on Eye, Ear, Nose and Throat

Dr. W. B. Clark, New Orleans, Chairman

1. The Value of Central Field Studies Over the Conventional Type of Visual Field Studies—Dr. Shelley R. Gaines, New Orleans.

2. Sinus Disease Producing Monocular Proptosis, with Case Reports—Dr. L. W. Alexander, New Orleans. To open discussion—Dr. Olin W. Moss, Lake Charles.

Section on Urology

Dr. J. R. Stamper, Shreveport, Chairman

1. Prostatic Obstruction and Some of Its Com-

mon Complications—Dr. Edgar Burns, New Orleans. To open discussion—Dr. U. S. Hargrove, Baton Rouge.

Section on Radiology

Dr. Lucien A. Fortier, New Orleans, Chairman
1. Roentgenologist as a Medical Consultant—
Dr. Leon J. Menville, New Orleans. To open discussion—Dr. Lester J. Williams, Baton Rouge.

Section on Orthopedic Surgery

Dr. John T. O'Ferrall, New Orleans, Chairman
1. Management of Shaft Fractures of the Long Bones (Lantern Slides)—Dr. F. Walter Carruthers, Little Rock, Ark. To open discussion—Dr. H. Theodore Simon, New Orleans.

RAPIDES PARISH MEDICAL SOCIETY

At the regular monthly meeting of the Rapides Parish Medical Society on December 6, 1943, the following officers were elected for 1944: President, Dr. O. B. Owens; First Vice-President, Dr. A. L. Culpepper; Second Vice-President, Dr. H. A. White; Secretary-Treasurer, Dr. V. F. Chicola. Board of Censors, Dr. H. A. White, Dr. L. D. Gremillion, and Dr. O. B. Owens. Delegates, Dr. M. B. Pearce, Dr. M. H. Foster, Dr. H. H. Hardy, Jr. Alternates, Dr. F. A. Thomas, Dr. H. A. White, Dr. R. G. Bryant.

FIFTH DISTRICT MEDICAL SOCIETY

At a recent meeting of the Fifth District Medical Society the following officers were elected for the year 1944: President, Dr. D. T. Milam, Monroe; Vice-Presidents, Dr. F. H. Mecom, Caldwell Parish; Dr. N. G. Nasif, Catahoula Parish; Dr. L. L. Coleman, Concordia; Dr. J. P. Davis, East Carroll Parish; Dr. R. E. King, Franklin Parish; Dr. T. A. Deckle, Jackson Parish; Dr. J. B. Harris, Lincoln Parish; Dr. H. C. Sévier, Madison Parish; Dr. Guy D. Williams, Morehouse Parish; Dr. W. E. Jones, Ouachita Parish; Dr. T. M. Sayre, Richland Parish; Dr. J. Whitaker, Tensas Parish; Dr. C. C. Francis, Union Parish; Dr. D. W. Kelly, West Carroll Parish; Secretary-Treasurer, Dr. J. E. McConnell, Monroe; Delegate, Dr. W. V. Garnier, Bastrop; Alternate, Dr. Wm. L. Bendel, Monroe.

IBERVILLE PARISH MEDICAL SOCIETY

At a meeting of the Iberville Parish Medical Society held on January 20, 1944, the following officers were elected for this year: President, Dr. Edward C. Melton, Plaquemine; Vice-President, Dr. W. H. Wagley, Maringouin; Secretary-Treasurer, Dr. R. J. Spedale, Plaquemine; Delegate, Dr. B. O. LeBlanc, St. Gabriel; Alternate, Dr. R. J. Spedale, Plaquemine.

ACADIA PARISH MEDICAL SOCIETY

At a recent meeting of the Acadia Parish Medical Society the following officers were elected for the year 1944: President, Dr. C. D. Brunt, Iota;

Vice-President, Dr. A. R. Morgan, Crowley; Secretary-Treasurer, Dr. S. R. Henry, Crowley.

NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The 1944 meeting of the New Orleans Graduate Medical Assembly held in New Orleans, March 6-9 was probably the most successful meeting the organization has ever held. There were a greater number of doctors in private practice than have ever attended before. The total registration, 1,319, was not as large as the previous year when 1,799 men registered to attend the meeting. However, in that particular year junior students were invited to attend, and there were a very large number of doctors in the armed forces. Whereas in 1944 there were only 170 of these men, in 1943 there were 494. It is obvious that a very large number of the physicians of the armed services have left this country.

The breakdown of the figures in attendance show that the registrants included 130 members, 174 local doctors, 548 out of town physicians, 143 residents and interns, 185 senior students, and 139 exhibitors. The average attendance at each session was approximately 500.

This year 155 visiting wives came to New Orleans with their husbands.

Physicians came from 32 different states, as well as one who came from the Republic of Panama. The adjoining states of course showed the largest number of registrants, Texas leading with 108, followed by Alabama with 54, and Mississippi with 42. Three men registered from California, seven from Illinois, two from Massachusetts, five from New York, two from Pennsylvania, and four from Mississippi. These were the states that were the farthest away from New Orleans.

AMERICAN UROLOGICAL ASSOCIATION

The annual meeting of the Southeastern section of the American Urological Association was held in New Orleans, March 2-4. Dr. Henry W. E. Walther was local chairman of this meeting. Dr. C. E. Burford, St. Louis, president of the American Urological Association, appeared on the program. Dr. Jeff C. Pennington, Nashville, Tennessee, former president of the association, likewise addressed the convention, as did Lieutenant Colonel Earl C. Lowry, Atlanta.

NEWS ITEMS

The Executive Board of the American Public Health Association announces the Second Wartime Public Health Conference and the 73rd Annual Business Meeting in New York City, October 3, 4, and 5, 1944. Meetings of related organizations will take place on Monday, October 2. Headquarters will be the Hotel Pennsylvania.

The United States Office of Civilian Defense today announced that its Chief Medical Officer, Dr.

George Baehr, will retire on March 1 after two and a half years of service. He will be succeeded by Dr. W. Palmer Dearing, who has been Assistant Chief Medical Officer since the establishment of the Medical Division of the Office of Civilian Defense.

The general oral and pathology examinations of the American Board of Obstetrics and Gynecology (Part II) for all candidates will be conducted at Pittsburgh, Pennsylvania, by the entire Board from Wednesday, June 7, through Tuesday, June 13, 1944. The Hotel William Penn in Pittsburgh will be the headquarters for the Board. Formal notice of the exact time of each candidate's examination will be sent him several weeks in advance of the examination dates. Hotel reservations may be made by writing direct to the Hotel.

INFECTIOUS DISEASES IN LOUISIANA

The Louisiana State Board of Health reported that for the week ending February 12 the following diseases were reported in numbers greater than 10. Influenza leads the list with 73 cases. This makes a total of almost 20,000 cases that have been reported in 1944. Then comes measles with 41 cases, pulmonary tuberculosis 34, pneumococcic pneumonia 26, chickenpox 20, mumps 19, meningococcus meningitis 17, unclassified pneumonia 14, and diphtheria 12. Nine of the unclassified pneumonias were reported from military sources as were four of the cases of meningitis. The following week ending February 19 there were listed 121 cases of influenza, 84 of measles, 44 of pulmonary tuberculosis, 29 of septic sore throat, 27 of mumps, 21 of pneumococcic pneumonia, 15 of chickenpox, and 10 of unclassified pneumonia. There was one case of poliomyelitis reported from Evangeline Parish this week. For the week which terminated February 26 there were listed 258 cases of measles, 163 of influenza, 42 of pulmonary tuberculosis, 40 of chickenpox, 23 of mumps, 19 each of pneumococcic pneumonia and unclassified pneumonia. There were nine cases of meningococcus meningitis reported this week, a total of 78 so far this year, and one case of poliomyelitis. The week which ended March 4 included the cases of venereal diseases for the preceding four weeks. There were 1,109 cases of gonorrhea, 1,069 of syphilis, 78 of chancroid, and 18 of lymphopathia venereum. Of the other diseases measles was well out to the front with 382 cases, following by 214 of influenza, 44 of pulmonary tuberculosis, 41 of chickenpox, 37 of mumps, 18 of unclassified pneumonia, 14 of pneumococcic pneumonia, and 12 of meningococcus meningitis. It was rather interesting that of the venereal diseases only a comparatively few were reported from military sources. They also reported two cases of meningitis and 12 of unclassified pneumonia. For the week ending March 11 influenza again led the list with 314 cases, followed by 211 of measles, 68 of mumps, 55 of chickenpox, 31 of pulmonary tuberculosis, 13 of unclassified pneu-

monia, and 10 of German measles. About half of the mumps cases came from the army, and seven of the 10 cases of German measles.

HEALTH OF NEW ORLEANS

The Bureau of the Census, Department of Commerce, reported that for the week which ended February 19 there occurred in the City of New Orleans 141 deaths, divided 95 white, 46 non-white. Twelve of these deaths were in children under one year of age. For the week which closed February 26, there was a considerable reduction in the death rate, these falling to 126, divided 77 white, 49 non-white, with 14 of the deaths in children under one year of age. The following week which came to a close March 4 found an increase in the number of deaths in the city, 155 of the citizens expiring, of whom 100 were white, 55 were colored, and 17 were under one year of age. The following week closing March 11 there were listed 131 deaths in the city, 89 white, 42 colored, with eight of these deaths taking place in children under one year of age. Since the epidemic of influenza has subsided there have been rather sharp reductions in the number of deaths in the city, as for example in the last week quoted the three year average has been 171.

CORRESPONDENCE

Louisiana State Medical Society,
1430 Tulane Avenue,
New Orleans, La., U. S. A.
Dear Dr. Talbot:

The Journal has been delayed en route to me because it has to follow me through several changes in address. My new A. P. O. number is 152; the address is otherwise unchanged. The Journal is not only of scientific interest to me but is the one means I have to keep in touch with the activities of my professional friends at home and in the services. I correspond with Henry Butker as a result of his letter in a past issue. Here in England I have met only one New Orleans physician, Major Henry Lindner, who is doing genito-urinary with a hospital unit from Syracuse University. Recently, I was associated for a month with a unit from Loyola University of Chicago. They spent several months training in New Orleans so we had many friends in common. My regards to the Society—keep the home fires burning.

Sincerely,

(Signed) Ed Guidry.

Captain E. R. Guidry,
390 Engineers,
A. P. O. 152,
c/o Postmaster, New York, N. Y.

DR. LOUIS JULIAN GENELLA
(1875-1944)

Dr. Louis J. Genella of Kenner, was born in New Orleans on January 9, 1875. He graduated in 1898 from the Tulane University School of Medicine,

and was assistant to Dr. Rudolph Matas for several years. He practiced medicine for fifty years here in New Orleans and Kenner where he went to live two years ago. Dr. Genella died in New Orleans on February 27, 1944. He leaves behind a large family and a host of good close friends. His death will be mourned by all of them.

In addition to his local medical activities, at one time Dr. Genella served in the World War, the Spanish American War, and was wounded in the World War I. He received the Purple Heart, the citation stating that he was wounded by shrapnel while administering medical care to some British soldiers.

DR. FRANK T. GOUAUX, SR.
(1883-1944)

One of our former presidents, as well as a former Third District councilor of the Louisiana State Medical Society, died March 19 at the Hotel Dieu in New Orleans after a relatively long illness. Dr. Gouaux practiced in Lockport ever since the time of his graduation from the Medico-Chirurgical College of Philadelphia. He became a member of the State Society in 1914 and retained his membership until the time of his death.

The loss of Dr. Gouaux leaves a vacancy in the State Medical Society which shall be hard to fill. Dr. Gouaux was an energetic, lovable character, who was respected and admired by his fellow practitioners. Evidence of their admiration for the man is shown by the fact that he was elected to the highest position the medical society has when he was made president in 1929.

**WOMAN'S AUXILIARY TO
LOUISIANA STATE MEDICAL SOCIETY
ANNUAL MEETING HEADQUARTERS
ROOSEVELT HOTEL**

Registration Desk.....Mezzanine Floor
Mrs. Carroll F. Gelbke, General Chairman
Mrs. C. Grenes Cole, Vice-Chairman
Mrs. Roy B. Harrison, Vice-Chairman

Honorary Committee

Mrs. George J. Taquino Mrs. John S. Dunn
Mrs. Edwin L. Zander Mrs. C. C. deGravelles

Chairmen of Subcommittees

Mrs. Daniel J. Murphy.....Registration
Mrs. Daniel N. Silverman.....Information
Mrs. H. Theodore Simon.....Tickets
Mrs. Jerome E. Landry.....Publicity
Mrs. M. Earle Brown.....Transportation
Mrs. Louis Leggio.....Telephone
Mrs. Cassius L. Peacock and
Mrs. Joseph E. Brierre.....Flowers
Mrs. Edmond Souchon.....Tea
Mrs. Paul Lacroix.....Tea Girls
Mrs. Charles B. Odom.....Pages
Mrs. J. Kelly Stone.....Printing

MONDAY, APRIL 24, 1944

1:00 p. m. Registration — Mezzanine Floor —
Roosevelt Hotel
3:00 p. m. Pre-Convention Executive Board
Meeting—Parlor H
Mrs. George J. Taquino, Presiding.
Invocation—Dr. Julian B. Feibelman
Address—Mrs. Eben J. Carey, President,
Woman's Auxiliary, American Medical Association,
Wauwatosa, Wisconsin.

TUESDAY, APRIL 25, 1944

9:00 a. m. Opening Meeting, Louisiana State
Medical Society—Grand Ballroom.
10:00 a. m. General Session—University Room
Mrs. George J. Taquino, Presiding
Invocation—Rev. John W. Hynes,
S. J.
Address of Welcome—Mrs. John S.
Dunn, New Orleans.
Response—Mrs. Charles M. Horton,
Franklin.
Greetings from:
Dr. C. C. deGravelles
Dr. Edwin L. Zander
Dr. Daniel J. Murphy
Dr. Thomas B. Sellers
Dr. Val H. Fuchs
Address—Mrs. John Pierpont Hel-
mick, President, Woman's Auxil-
iary, Southern Medical Association,
Fairmont, West Virginia
In Memoriam—Mrs. S. M. Black-
shear, New Orleans
Piano Selections—Mrs. Walter C.
Hava
Presentation of Flowers—Penelope
Matthews Martin and Mitylene
Parham
Benediction—Rev. Skardon D'Aubert
Reading of minutes
Reports—State Officers
State Committees
Parish Presidents
Special Committees
Report of Woman's Auxiliary to
Southern Medical Association—
Mrs. Wiley R. Buffington, New Or-
leans
Report of Woman's Auxiliary to
American Medical Association—
Mrs. Edwin R. Guidry, New Or-
leans
Unfinished Business
Recommendations of Executive
Board
New Business
Report of Nominating Committee
Election of Officers

Introduction and Installation of New Officers—Mrs. Arthur A. Herold, Shreveport

Announcements by New President
Adjournment

12:00 noon Post-Convention Executive Board Meeting, University Room—Mrs. Rhodes Spedale, presiding.

3:30 p. m. Tea—Patio Royale, 417 Royal Street In honor of Mrs. Rhodes Spedale.

OFFICERS

WOMAN'S AUXILIARY TO LOUISIANA STATE MEDICAL SOCIETY

Advisory Council

Dr. Thomas B. Sellers, Chairman, New Orleans

Dr. Broox Cleveland Garrett, Shreveport

Dr. George J. Taquino, New Orleans

Officers

President—Mrs. George J. Taquino, 18 Fontainebleau Drive, New Orleans.

President-elect—Mrs. Rhodes Spedale, Plaquemine.

First Vice-President—Mrs. W. R. Harwell, 715 Elmwood, Shreveport.

Second Vice-President—Mrs. A. D. Tisdale, Riverside Sanitarium, Monroe.

Third Vice-President—Mrs. D. B. Barber, Pineville.

Fourth Vice-President—Mrs. Thos. Richardson, Minden.

Treasurer—Mrs. Paul Lacroix, 3122 State Street Drive, New Orleans.

Recording Secretary—Mrs. E. Ellender, Houma.

Corresponding Secretary—Mrs. Waldemar Metz, 2437 Jefferson Avenue, New Orleans.

Historian—Mrs. Edward C. Melton, Plaquemine.

Parliamentarian—Mrs. M. H. Foster, Alexandria.

Chairmen of Standing Committees

Archives—Mrs. Jerome E. Landry, 2336 Milan Street, New Orleans.

Bulletin—Mrs. Cassius L. Peacock, 8415 S. Claiborne Avenue, New Orleans.

Cancer Control—Mrs. Edmond Souchon, 3136 Octavia Street, New Orleans.

Doctor's Day—Mrs. C. R. Gowen, 5900 Line Avenue, Shreveport.

Exhibits—Mrs. Donoyan C. Browne, 4920 St. Charles Avenue, New Orleans.

Finance—Mrs. Roy Carl Young, 1811 Jahncke Avenue, Covington.

Hygeia—Mrs. Robert W. O'Donnell, 117 Stone Avenue, Monroe.

Indigent Widows—Mrs. Aynaud Hebert, 2013 Napoleon Avenue, New Orleans.

Legislation—Mrs. Roy B. Harrison, 2327 Napoleon Avenue, New Orleans.

Organization—Mrs. B. C. Garrett, 4700 Fairfield, Shreveport.

Press and Publicity—Mrs. M. C. Wiginton, Hammond.

Printing—Mrs. Willard Wirth, 402 Vincent Avenue, New Orleans.

Program—Mrs. DeWitt T. Milam, 1704 Island Drive, Monroe.

Public Relations—Mrs. John S. Dunn, 8410 Pontchartrain Blvd., New Orleans.

Red Cross—Mrs. Clarence B. Erickson, 423 Herndon Avenue, Shreveport.

Revision of By-Laws—Mrs. C. Grenes Cole, 4938 St. Charles Avenue, New Orleans.

War Participation—Mrs. Arthur D. Long, Jr., Baton Rouge.

Councilors

First District—Mrs. Daniel J. Murphy, 127 S. Solomon Street, New Orleans.

Second District—Mrs. Daniel N. Silverman, 47 Versailles Blvd., New Orleans.

Third District—Mrs. C. C. deGravelles, New Iberia.

Fourth District—Mrs. R. T. Lucas, 535 Perremont Road, Shreveport.

Fifth District—Mrs. A. G. McHenry, 1910 Riverside Drive, Monroe.

Sixth District—Mrs. A. W. Martin, 902 Virginia Avenue, Bogalusa.

Seventh District—Mrs. J. D. Frazar, DeRidder.

Eighth District—Mrs. H. O. Barker, Horse Shoe Drive, Alexandria.

OFFICERS

WOMAN'S AUXILIARY TO THE ORLEANS PARISH MEDICAL SOCIETY

President—Mrs. John S. Dunn, New Orleans.

President-Elect—Mrs. H. Theodore Simon, New Orleans.

First Vice-President—Mrs. J. Kelly Stone, New Orleans.

Second Vice-President—Mrs. Daniel N. Silverman, New Orleans.

Third Vice-President—Mrs. Edmond Souchon, New Orleans.

Fourth Vice-President—Mrs. M. Earle Brown, New Orleans.

Recording Secretary—Mrs. Lloyd J. Kuhn, New Orleans.

Corresponding Secretary—Mrs. H. F. Brewster, New Orleans.

Treasurer—Mrs. Jonas W. Rosenthal, New Orleans.

Parliamentarian—Mrs. Daniel J. Murphy, New Orleans.

Historian—Mrs. William Kohlmann, New Orleans.

Publicity—Mrs. Jerome E. Landry, New Orleans.

The Executive Board meeting of the Woman's Auxiliary to the Louisiana State Medical Society, held on February 17, 1944, at Orleans Club, in

New Orleans, was most interesting and though not as large a crowd as usual, (due to the present unsettled conditions of many members) it was a very enthusiastic meeting and a successful one. Immediately following the meeting a very delightful luncheon was served, with Mrs. Taquino as hostess, and it was indeed a very happy occasion for all privileged to be present.

The meeting was called to order by the president, Mrs. George Taquino and a very excellent report read of the regular activities of the organization that were carried out during the year, and of the new projects, such as, collecting of old surgical kits for Coast Guard cutters; also of having each auxiliary procure a speaker for their monthly meeting to familiarize the members with the "Wagner, Murray, Dingall Bill," and reporting that letters had been written to Louisiana Senators and Congressmen asking them to help defeat this bill.

The treasurer, Mrs. Lacroix, gave her report and it was approved as read and was to be filed.

The parish presidents gave very excellent reports of the work done in their auxiliaries. Some very fine work is being done all over the state in all projects of the auxiliary.

Various committee reports were read. Our historian, Mrs. Milton asked for clippings and any material pertaining to auxiliary work that she may complete her history book.

The Indigent Widows Fund, as reported by Mrs. Hebert has a total of \$154.25. She hopes to receive other donations soon. Mrs. Peacock reported twenty-two subscriptions to the bulletin. An outstanding report of Red Cross work was read by Mrs. Erickson.

The activity of auxiliary members on "War Participation" was shown in Mrs. Long's report. The doctors' wives participate in bond selling, canteen work and all other activities pertaining to the war effort.

Mrs. Souchon has sent letters appealing to members to participate in the Cancer Control Cam-

paign in April. I am sure that she will not fail to get 100 per cent cooperation to this very important cause.

Mrs. Metz has been a very busy person with all the letters, cards, and lists she has written and a fine report she gave as corresponding secretary.

There being no unfinished business the president hurried on into the order of new business. Mrs. Taquino told of the plans being formulated for the state convention to be held in New Orleans, April 24, 25, and 26. The Executive Committee met February 21, to discuss plans for this meeting.

There was much discussion regarding the "Year Book" and it was decided it should not be printed as usual.

Mrs. Erickson moved that, in place of the regular Year Book being printed that a supplement containing a list of national and southern officers, the State Executive Board, the parish officers and state projects. In Memoriam is to be included. These supplementary pages could be made to size and slipped into the last Year Book.

Mrs. Long seconded the motion made by Mrs. Erickson. It was voted upon and unanimously carried.

It was voted that there will be no exhibits this year as the doctors are not having their usual scientific exhibits. Mrs. Silverman made this motion and it was seconded by Mrs. Wirth.

There was no further business so a motion to adjourn was in order, this was rescinded, however, when it was learned that Mrs. Long had a splendid report on the Memphis Fourth Regional Congress for the Women's Field Army for Cancer Control. She and Mrs. Jones attended this meeting Jan. 30, 31, and Feb. 1, 1944. This report was read.

After the reading of the fine report, the meeting adjourned.

The members present were as follows: Mesdames Taquino, Spedale, Lacroix, Metz, Landry, Melton, Hebert, Harrison, Wirth, Dunn, Erickson, Cole, Long, Jr., Silverman, deGravelles.

Mrs. M. C. Wiginton,
Press and Publicity Chairman.

BOOK REVIEWS

When Doctors Are Rationed: By Dwight Anderson and Margaret Baylous. New York, Coward-McCann, Inc., 1942. Pp. 25. Price, \$2.00.

This book was written for laymen. It gives the mechanism of the Procurement and Assignment Service, both from the standpoint of civilian and military needs. Excellent information is presented on how to be a good patient, how to choose a doctor and what one may expect of doctors. This part of the book could be read by doctors with a great deal of benefit to themselves. All in all it is well writ-

ten and can be recommended as excellent reading and information to our patients.

VAL FUCHS, M. D.

Handbook of Nutrition, A Symposium: Prepared Under the Auspices of the Council on Foods and Nutrition of the American Medical Association. Chicago, American Medical Association, 1943. Price, \$2.50.

This book represents the reprinting of a series of articles which appeared in the Journal of the American Medical Association. It is splendid for the medical profession that the American Medical

Association has collected in one volume these articles on the various phases of nutrition. The material is written by a group of authors who are outstanding figures in the world of nutrition. Without naming all of the authors of the different chapters, suffice it to say that men such as Bloor, DuBois, McCollum, Elvehjem, Cowgill, Sebrell, and Wilder are included. The reputation of these authors is a guarantee of the authenticity of the articles.

Several years ago the Journal of the American Medical Association printed a similar book on the vitamins, which was very well received. In this present work the chapters deal with various aspects of nutrition that were not covered in the original volume, and cover the field with entire adequacy. This book really is a "must" book. Every doctor should have it in his library for ready reference in his every day work.

J. H. MUSSER, M. D.

Modern Management of Colitis: By J. Arnold Bergen, M. D., M. S., F. A. C. P. Springfield, Ill., Chas. C. Thomas Co., 1943. Pp. 322. Price, \$7.00.

Specializing within his specialty, gastroenterology, J. Arnold Bergen has unquestionably added an authoritative text on intestinal disease with his volume "The Modern Management of Colitis."

In his foreword Bergen justifies his publication of the text during this present strife. The reviewer feels he need not have made such a useless introduction for the actual text needs no justification at any time. This is an impressive and complete treatise covering every aspect of colonic disease.

In a brief introductory chapter the essentials of structure and function of the large intestine are reviewed. Adequate consideration on history and examination with instructive illustrations on rectal and roentgenologic examination highlight this section.

In limiting the meaning of the term "colitis" Bergen calls for reserve in the use of this title to actual inflammatory disease. This leads to the establishment of irritable colon as the preferable diagnostic term and rationalization for the consideration of this entity as a sociologic disorder related to social, economic or other maladjustments.

The types of ulcerative colitis, nine in all, are each elaborated upon with each thoroughly surveyed with consideration given history, definition, incidence, causation, pathology, diagnosis, roentgenography, complications and therapy. The differential diagnosis of these various types becomes apparent as the chapters are reviewed. Lack of consideration given amebic granulomas and a degree of incompleteness in presenting the therapeutic aspects of amebiasis are pertinent. The latter is not forgiven when one considers the specificity of the amebicides in contrast to the extensive treatise

on the possibly effective measures used in thrombo-ulcerative colitis.

In devoting a section to allergic colitis it is hoped by the reviewer that the author will stimulate allergists and gastroenterologists to thought. This is a relatively neglected aspect of disease of the colon about which little is known and a diagnosis which draws little respect from any other than the sufferer. It is applied too loosely and managed too carelessly. Bergen has developed this section as fully as is practical. Some may well question his even suggesting oral administration of histaminase.

In a final chapter Bergen considers the conditions to be distinguished from colitis and thus concludes with meticulous thoroughness his excellent treatise on colitis.

The illustrations, throughout, totalling one hundred and forty-eight, are well selected and instructive. Case reviews add much to the interesting reading of the text. Departing from Mayo Clinic routine Bergen pleases the reviewer by not permitting statistics to overwhelm clinical information, rather he has been very practical in this respect and reveals his ability as a clinician, teacher and enterologist.

GORDON MCHARRY, M. D.

Reaction to Injury; Pathology for Students of Disease Based on the Functional and Morphological Responses of Tissues to Injurious Agents: By Wiley D. Forbus M. D. Baltimore, The Williams & Wilkins Company, 1943. Illus. Pp. 797. Price \$9.00.

This book, according to the author's preface, is developed from the concept that "The essential element in disease is . . . the reaction of the individual, in the last analysis, the reaction of the individual cells that compose the tissues, to agents and influences comprising the environment. The individual is considered to be capable of reacting in only three essential ways: (1) by resisting; (2) by submitting, and (3) by effecting an adaptation. These three reactions, therefore, are taken to be the basis of all disease, and the recognized disease entities are considered to be the expressions of the elaboration of one or several of these reactions."

The present volume contains two of the four parts the author believes to be necessary for the development of the plan of the book. Of these completed parts, part one bears the title introduction to the study of disease. This section, comprising approximately one-seventh of the volume, opens with a discussion of the relation of pathology to medical sciences and to clinical medicine. This chapter is followed by a general introductory discussion of the human body in relation to its external and internal environment and its manner of reacting to injury. The subsequent chapters serve to introduce in a broad way the author's concepts of the causation of disease. Part two is

entitled active resistance of the body to injury by endogenous and exogenous agents through essentially protective, morphological and physiological reactions of the tissues—the inflammatory reaction and the disease entities arising therefrom. This larger portion of the book contains a comprehensive chapter on inflammation. In the following sections the author describes the reactions of the body tissues to injury from bacteria, viruses, rickettsiae, treponemata, fungi and foreign bodies. It is in these sections that the specific description of disease entities, for example, rheumatic heart disease, nephritis, typhoid fever and tuberculosis, are presented.

In the remaining two parts (now being prepared) the author proposes to deal with "the submissive type of reaction" and with "the reaction of adaptation."

The present volume contains five hundred and thirty-two well chosen and instructive figures. Of these all but sixty have been prepared from the author's material. Twenty of the photographs have been reproduced in colors. Numerous selected references to the literature are listed under conspicuous headings at the ends of appropriate chapters or sections.

This book differs from the standard textbooks of pathology in several respects. Neoplastic diseases are omitted. The subject matter dealing with infections and with specific disease entities is presented in greater detail than has been customary. Particular attention is paid to the genesis and development of the anatomical lesions in each disease process and to the resulting functional disturbances.

In the reviewer's opinion this book represents a significant contribution to the available literature dealing with pathology. It should interest the student of medicine, whether he is an undergraduate or a practicing physician. In its present form it seems to be best suited to collateral or advanced reading. However, final appraisal of its suitability as a textbook for an initial course in pathology should await the publication of parts three and four.

GRANVILLE A. BENNETT, M. D.

Memoir of Walter Reed: The Yellow Fever Episode: By Albert E. Truby, Brigadier General, U. S. Army, Retired, New York, Paul B. Hoeber, Inc., 1943, Pp. 239. Price \$3.50.

This little volume covers just what the title indicates—the yellow fever episode in the life of Walter Reed. It is not a biography of the man. General Truby was an interested observer of one of the greatest researches ever conducted—work that resulted in an epoch-making advance in the field of preventive medicine. He accepts the widely held view that Carlos Finlay originated the idea that led to this work while the Reed Board furnished the proof. Indeed, it is stated that Finlay provided the mosquito larvae used in at least some

of the experiments. The remark of Joseph Goldberger who said: "Reed converted a discredited hypothesis into an established doctrine," evidently has General Truby's approval. Stress is laid on the fact that the Reed group constituted an Army board, not a commission, as often is erroneously stated. The work of this Board was much facilitated by the fact that the Governor General of Cuba at the time was an Army Medical Officer who had been transferred to the line and will go down in history as Major General Leonard Wood, a medical officer who gained fame as commanding officer of the line. No complaint is made as to any failure on the part of the other officers of the Army to give cooperation. The Reed group lost some time in trying to confirm or disprove Sanarelli's report, indicating the bacterial origin of the disease. The well-known observations of Dr. Henry Carter, of the Public Health Service, on yellow fever in the rural South, to use General Truby's words, "Became Reed's guiding light in working out the mosquito theory." The doubt that has surrounded the infection of Dr. Lazear with yellow fever is resolved by the statement that it could hardly have been an accidental infection, as often stated, but that Lazear put it in that light for personal reasons. General Sternberg, the Surgeon General of the Army, was very friendly to the mosquito idea from the start, but General Gorgas was convinced only after the first experience with the suppression of yellow fever in Havana, when for the first time the mosquito theory was put to a field test. One can hardly name a more widely accepted or readily adopted conclusion than that of the Reed Board, a tribute to the confidence of the medical profession in the Chairman. One authority remarked that this work was worth more than the cost of the Spanish-American War, a statement with which it is hard to take issue. The State Medical Society of Louisiana has established a Reed Medal to be awarded annually for outstanding work by a member of the student body of each of the two medical schools in the State, thereby honoring Major Reed and itself.

G. W. MCCOY, M. D.

A Surgeon's World: By Max Thorek, M. D. Philadelphia, J. B. Lippincott Co., 1943. Pp. 410. Price \$3.75.

This is truly a delightful autobiography and it can be read by physicians or the laity with a great deal of satisfaction and pleasure.

An autobiography is difficult to review in a limited space without going into many of the details of the author's life. Suffice it to say that Thorek came to this country as a Hungarian emigrant when still a boy. By dint of hard work, native intelligence, the ability to grasp every opportunity and the purposeful attempt to make a success of his life, he finally obtained recognition as one of the outstanding surgeons in the country. The account of his life is quite fascinating. The author

is a philosopher and a thinker; he not only philosophizes about medicine and people and life in general but more specifically he recounts many of his medical experiences with a large clientele, many of whom were persons of reputation and fame.

Throughout the book the reader can grasp the tremendous ambition that motivated the life of Thorek. To accomplish what he did he worked long hours and pushed himself to the physical limit. The success he made in his life could not have been obtained without this desire to succeed but his outstanding success is the result of a combination of a fine brain plus the willingness to work.

This book is recommended to any intelligent reader but it might be especially recommended to the neophyte in medicine or to the young man about to take up the study of medicine.

J. H. MUSSER, M. D.

Minor Surgery: By Frederick Christopher, S. B., M. D., F. A. C. S. Philadelphia, W. B. Saunders, 5th Edition, 1944. Pp. 1006. 575 Illustrations. Price, \$10.00.

Dr. Christopher has always aimed to keep this book up to date, and has not allowed the present world conflict to interfere with its revision. Instead the fourth edition has been revised and many new phases of minor surgery have been added. Each subject is discussed briefly but completely, and theories are entirely omitted or only casually mentioned. The book is up to date and obsolete ideas have been depleted. However, since the revision of this volume, Dr. Christopher has changed his opinion regarding salt metabolism.

One completely new chapter on "Preoperative and Postoperative Care" has been added which includes subjects of increasing importance to the surgeon. Among these are dehydration, hypoprotrombinemia, vitamin deficiency, pulmonary complications, prophylaxis and treatment of thrombosis and embolism, and postoperative urinary complications arising from the use of the sulfonamides.

Throughout the various chapters, many subjects and ideas are treated for the first time and due emphasis is placed on them.

A brief bibliography is given with each chapter.

The reviewer feels that this is an outstanding volume on minor surgery, and should be of great value to both the student and the practitioner.

REYNOLD PATZER, M. D.

Biomicroscopy of the Eye: By M. L. Berliner, M. D. Vol. I. New York, Paul B. Hoeber, Inc., 1943. Pp. 709. Price, \$16.50.

Ophthalmology is indebted to the author of this outstanding work, which is the most comprehensive

and comprehensible on this subject yet written. Its 709 pages of text are supplemented by 282 black and white and 250 excellently colored illustrations. The first three chapters are devoted to the development and technic of biomicroscopy and to a description of the several makes of biomicroscopes. The conjunctiva, normal and abnormal, including non-inflammatory, inflammatory, and traumatic lesions and tumors, is then presented. The lid margins, sclera and cornea are discussed in somewhat the same manner. The last chapters deal with the anterior chamber and gonioscopy.

This book will be of value especially to younger ophthalmologists because it presents the fundamentals of this important subject in a systematic and orderly manner and is written in a very lucid style. The second volume on the biomicroscopy of the lens and vitreous is to be published in 1945.

CHAS. A. BAHN, M. D.

PUBLICATIONS RECEIVED

D. Appleton-Century Company, New York and London: *The Principles and Practice of Medicine*, originally written by Sir William Osler, Bart., M. D., F. R. C. P., F. R. S., by Henry A. Christian, A. M., M. D., LL. D., (Hon.) Sc. D., Hon. F. R. C. P. (Can.), F. A. C. P., 15th edition.

The Commonwealth Fund, New York: *Medical Care of the Discharged Hospital Patient*, by Frode Jensen, M. D., H. G. Weiskotten, M. D., and Margaret A. Thomas, M. A. (Oxon)

The Johns Hopkins Press, Baltimore: *The Jews and Medicine, Essays*, by Harry Friedenwald, M. D., D. H. L. (Hon.), D. Sc. (Hon.), Volumes I and II.

Paul B. Hoeber, Inc., New York and London: *Physical Foundations of Radiology*, by Otto Glasser, Ph. D., Edith H. Quimby, Sc. D., Lauriston S. Taylor, Ph. D., J. L. Weatherwax, M. A.

William Wood and Company, Baltimore: *Manual of the Diseases of the Eye*, by Charles H. May, M. D., with the assistance of Charles A. Perera, M. D.

The University of Chicago Press, Chicago: *Vascular Responses in the Extremities of Man in Health and Disease*, by David I. Abramson, M. D., F. A. C. P.

J. B. Lippincott Company, Philadelphia: *Clinics*, Volume II, No. 5, February, 1944, Symposium on War Medicine.

Lea & Febiger, Philadelphia: *A Text-Book of Pathology*, edited by E. T. Bell, M. D.

New Orleans Medical and Surgical Journal

Vol. 96

MAY, 1944

No. 11

THE NEW ORLEANS MEDICAL AND
SURGICAL JOURNAL
ONE HUNDRED YEARS OF MEDICAL
JOURNALISM IN LOUISIANA
MAY, 1844 — MAY, 1944

A MESSAGE FROM DR. MATAS
New Orleans

It is indeed a rare if not unique privilege that is given me to hail the hundredth anniversary of the birth of the *New Orleans Medical and Surgical Journal* with the greetings and congratulations of one of its oldest friends and contributors,—a veteran in its service who has kept pace during the last sixty-three years with the Journal's laborious but victorious climb to the summit of its ambitions in the service of the medical profession of Louisiana.

A glance at the files of the Journal will show that since 1882 (two years after my graduation) when my first original contribution was published in its columns, and later, in 1883, when I was invited to the editorial chair,—I have had the honor to serve, with some interruptions, the Journal's medical mission and its professional interests in multiple and varied functions,—as co-editor, collaborator and contributor, with more or less efficiency, but always with earnestness and fidelity, to the present time.

Besides, the pleasure has been given me to toast the welfare and prosperity of the Journal at its fiftieth (semicentennial), its seventieth, and now the hundredth anniversary of its fruitful and ever expanding existence.

* * * * *

At the risk of making biography out of history, but solely to simplify and abridge

the story of my early relations with the Journal and its editors, I will deal with this narrative in the first person singular.

* * * * *

EARLY HISTORY

It was chiefly after my matriculation in the Medical Department of the University of Louisiana (now Tulane) in 1877, that I made my first acquaintance with the Journal and its eminent editor, Dr. Samuel Merrifield Bemiss, professor of the Principles and Practice of Medicine, with whom I was destined soon after, as his patient during the great epidemic of 1878, to establish the most grateful relations.

EXTINCT MEDICAL SCHOOLS AND MEDICAL JOURNALS

In 1877, the *New Orleans Medical and Surgical Journal* was the only medical journal published in Louisiana and in the Gulf states. All journals previously published in Louisiana had ceased to function with the closing of the rival schools and societies that had given them birth. The last of these, "The Charity Hospital Medical School" had just closed its doors, leaving behind it many valuable relics of its existence (library, museum specimens, furniture) in a building on Common Street (now Tulane Ave.) directly across the street from the Charity Hospital, still known as the Hospital ambulance building. This building had stood for the New Orleans School of Medicine, its extinct predecessor of the ante-bellum period. Both of these schools had numbered very distinguished men in their faculties who greatly adorned and enriched the literature of Louisiana with their scholarly and scientific contributions. The journals referred to published very valuable papers, particularly the *New*

Orleans Medical News and Hospital Gazette, which was edited in succession by the distinguished teachers, Samuel Choppin, Fenner and Brickell. On the other hand, the *New Orleans Medical and Surgical Journal*, which had been the organ of the University faculty, virtually since the merger of Drs. Harrison and Carpenter (former deans) with the interests of Drs. Fenner and Hester, the first proprietors, in 1845, retained the modest and unpretentious but extraordinary vitality that is so apparent today.

TEMPORARILY FORGOTTEN WORTHIES

To the undergraduate students of the late seventies and eighties, as well as to the great majority of the young doctors of that period, the names of the men who had laid the foundation of the Journal were virtually unknown as such or, at best, were merely recalled as silhouettes of a dim past. This haziness particularly applied to the knowledge of the men who founded and edited the Journal during the seventeen years that preceded the Civil War, between 1844 and 1861, which includes such distinguished names as Fenner, Hester, Carpenter, Harrison, Bennet Dowler, James Jones, W. C. Nichols, all of whom exhibited a very high type of literature and scientific merit, which made the Journal rank with the best of its contemporaries in the north and east.

Comment: What a comfort it would give these neglected heroes if they could only look back and peer over the shoulders of the young, ambitious historians who now scrap and scrape in libraries for every little bit of paper that will give them some clue to even the smallest wrinkle on the face of these now highly prized historic worthies.

DR. CHAILLE RESCUES JOURNAL AFTER CIVIL WAR

In the desolation of the Civil War, scientific and journalistic activities were completely suspended, from 1862-1865, but in 1866 Chaillé, aided by Nichols and Herick, appeared upon the scene and with characteristic energy began the task of tying the broken ends together, and to awaken the Journal from the paralytic

stupor into which the three fated years of the war had plunged it. Chaillé and his able associates were soon reinforced (1867) by other members of the Faculty,—Richardson, Mallet, Josiah Nott, S. M. Bemiss, who in succession and all together completed the first quarter century (1844-1869) of the Journal's most troubled existence. By this time the Journal had become the exponent of the Medical College and its Faculty. It had survived the great trials and ruinous consequences of the Civil War, and had become the repository of the publications of the ablest and most distinguished scholars of the South, notably Cartwright, Dowler, Barton, Josiah Nott, Hunt, Cenas, Wedderstrandt, Wedderburn, and later Joseph Jones, who became one of its most erudite and voluminous contributors. But these trials were only a precursor to a deluge of evils caused by the political tyranny of the so-called period of reconstruction which created obstacles in the path of **peace**, civilization and prosperity. The editorial board, composed of the distinguished leaders, previously mentioned, found themselves antagonized by the tyranny of the white carpetbaggers and the arrogance of the emancipated slaves, who were the tools and toys of their sordid and utilitarian guides and task masters. All this created a chaotic state of affairs which accounts for the poverty and marasmus of the Journal during the nefarious period of the so-called reconstruction and carpetbag rule in Louisiana.

PUBLICATION OF JOURNAL SUSPENDED 1870-1873

While the Journal and the Medical College had survived the disastrous effects of the war, which had proved fatal to the rival schools, it had, none the less, suffered severely from that cause and even more from the political and financial depression of reconstruction and carpetbagism. In fact, it had been weakened so seriously in its finances because of the poverty of its subscribers, that, despite the great reputation of its editors and of the excellence of its technical papers, it had to suspend its publication during the years 1870-1873.

The following note at the end of a salutatory editorial in Vol. 1, No. 1, July 1873,

is suggestive of the causes that led to the suspension of the Journal in the interval between 1871 and 1873.

"But those who possess the best opportunities to know, tell us that the present deluge of vice and crime is likely to overtop and hide whatever of moral excellence is yet left to us. Retrogression in science is the inevitable consequence of backsliding in matters of rectitude and morality. When ignorance and wretched incompetency come to fill all the high places, learning and virtue are quickly discredited, and must, perforce, retire to the background. Let us as a profession unite our energies, moral and intellectual, to prevent so deplorable an outcome."

It is also significant in confirming the chaotic and demoralized state of the community at the time; that the battle of September 14, 1874, fought on Canal Street between the citizens "White League" in which the leaders of the medical profession took a very active part and the Metropolitan Police (which protected the carpetbaggers) ended in the defeat of the pilfering politicians. The battle was essentially an agonized cry of the people for delivery from the miserable evils that beset them. It was this situation that diverted the medical profession from its normal interests in scientific and professional labors so necessary for the Journal to maintain its existence.

DR. BEMISS HEROICALLY KEEPS JOURNAL ALIVE

Thus another decade of trials and tribulations made more gloomy by epidemics, including the widespread and deadly yellow fever epidemic of 1878 and by the great overflow of 1882, which swamped the most productive plantations, laying low all agricultural pursuits and enterprises, had all combined to impoverish the people of Louisiana just as they were beginning to recover from the tyranny and rule of carpetbagism and reconstruction. When a better day dawned, in January 1883, Dr. Bemiss who had kept up the publication in the face of immense difficulties and personal sacrifices which would have daunted and discouraged a less devoted man, was glad to be relieved of his editorial cares through the purchase in December, 1882, of his interest in the Journal by a new company, organized largely through the instru-

mentality of his former associate, Dr. W. H. Watkins.

THE JOURNAL LEAVES CONTROL OF COLLEGE FACULTY

The new proprietors of the Journal were Drs. Daniel C. Holliday, W. H. Watkins, Frederick Loeber, L. F. Salomon and John Godfrey. This was a very important episode in the history of the Journal for its ownership now passed from the College Faculty to the possession of the New Orleans Medical and Surgical Association,* a new, powerful organization which was entirely independent of all college interests or factional influence even of the authority of the American Medical Association. While demanding evidence of good ethical and professional standing of all its members it rejected the authority of the American Medical Association and its code of ethics as laws regulating its local affairs. It differed in this way from the Orleans Parish Medical Society which had been organized in 1878 by the leading members of the Faculty as a unit of the American Medical Association.

NEUTRALITY OF NEW EDITORIAL REGIME

In a historical contribution to the celebration of the seventieth anniversary of the Journal under the editorship of Drs. Chas-saignac and Dyer, in May, 1914, I referred to the neutral or non-partisan attitude of the Journal under the administration of Dr. Bemiss' successors; a neutrality which was emphasized by Dr. Godfrey, who was its first editor under the new regime. As clearly shown by his well tempered editorial, in the February issue of the Journal on "The Ethical Problem," the editorial board did not object to the code as a text for instruction in professional behavior, but did not accept it as a code of laws which could be made punitive if not obeyed. Godfrey, a man of mature judgment and excel-

*Membership in this Society did not exclude membership in the Orleans Parish or State Societies. The disastrous effect of the too rigorous and disciplined application of the code on the harmony and unity of a previous organization had led to the emphatic opposition and threat of disrapture of the Society. See Presidential Address, "On the Ethical Problems," by Dr. Joseph Holt, New Orleans M. & S. J., Dec. 2, 1882.

lent educational foundation, was particularly fitted for the editorial management of the Journal in that period of conflicting opinions. Besides his fine judgment, Godfrey was endowed with unusual lyrical talent which came to light with delightful effectiveness in his humorous anniversary address before the New Orleans Medical and Surgical Association, December 2, 1882. The poem consists of eighteen stanzas with innumerable references to contemporary individuals and current events, reminding one, in a way, of Oliver Wendell Holmes' humor in his poetical addresses to medical societies. His resignation from the editorship of the Journal three months after his election to this post caused by his promotion to another station in the United States Marine Hospital Service, was very regrettable, and a severe blow to the new company as well as to the local profession. It was with great humility and hesitation that I accepted the invitation to succeed so able a man. But the situation was looked upon as an emergency as the other members of the group, who were my seniors, were carrying heavy obligations too important to divert them by the exacting duties of the editorial chair. I finally consented to remain with my friend, Dr. L. F. Salomon, secretary-treasurer of the group, to continue in charge of the business management. I had begun to work with considerable vim and enthusiasm when an unexpected and imperative business called me to the far West, where I was detained until the Fall of 1883. During my absence, Dr. Salomon continued practically alone at the editor's desk with such collaboration as I could give him at a distance with the meager resources at my command. On my return to New Orleans I resumed my editorial duties and continued in charge with Dr. Salomon as my most active and helpful associate until July, 1884, when the Journal passed into the hands of the New Orleans Publishing Company, which was constituted almost exclusively by the Faculty of the New Orleans Polyclinic, a post-graduate school, which ultimately became the Graduate School of Tulane (1906). As one of

the founders of the Polyclinic staff, I continued to serve the new administration as editor with all the other members of the company assisting as co-editors and collaborators until April 1885, when I was appointed Demonstrator of Anatomy in the Medical School and resigned from the editorial chair.

While connected with the New Orleans Publishing Company, my editorial responsibilities were made much lighter by the zealous cooperation of all the members of the editorial staff, who entered into their new duties with great personal interest and zeal. Many of the strongest and best editorials were contributed by Dr. H. D. Bruns whose characteristic, forceful and fearless pen proved one of the most valuable assets of the company during the entire period of its existence, which lasted until July, 1891, when the organization dissolved, and Dr. Augustus McShane, my faithful friend and able assistant demonstrator of anatomy at the College became the sole editor and proprietor. I was associated with him as collaborator until March 1896 when his rights and interests were sold to Drs. Chassaignac and Dyer with whom I was also associated as collaborator until 1922, when the Journal passed to the ownership of the State Society.

TRANSFER OF JOURNAL TO STATE SOCIETY

Dr. Dyer died in 1920 and Dr. Chassaignac remained the sole editor and proprietor until 1922, when the transfer of the Journal to the Louisiana State Medical Society was effected by a deed of sale from Dr. Chassaignac to the committee of the Society which had managed the entertainment of the American Medical Association. This committee had transferred its surplus funds to the Society for a part payment to Dr. Chassaignac of his ownership of the Journal. This purchase of the Journal from Dr. Chassaignac was approved by the House of Delegates, May 6, 1922. The persons most concerned in the transaction were the members of the committee of arrangements who negotiated the purchase from Dr. Chassaignac: Doctors A. E. Fossier, chairman, Paul Gelpi and Theodore

Dimitry. Gelpi, as president of the society (See *Journal* for report of the President to the House of Delegates, p. 774, 1923), was largely instrumental in facilitating the transaction.

A SYNOPSIS TABLE

The *New Orleans Medical and Surgical Journal* during the first century of its existence, has been owned, controlled or directed, directly or indirectly, by the following Institutions, Societies or individuals:

1. University of Louisiana Medical Department (through the members of its Faculty or allied friends) 1844-1882 38 years
2. New Orleans Medical and Surgical Association (through a group of its leading members) 1882-1884 2 years
3. New Orleans Medical Publishing Company (New Orleans Polyclinic) 1884-1891 7 years
4. Dr. McShane, sole editor and proprietor, 1891-1896 5 years
5. Drs. Chassaignac and Dyer, 1896-1920, Dr. Chassaignac alone following Dr. Dyer's death, 1920-1922 26 years
6. Louisiana State Medical Society, 1922-1944 22 years

In all, six administrations during the course of the century.

SIGNIFICANCE OF STATE SOCIETY OWNERSHIP

The purchase of the *New Orleans Medical and Surgical Journal* by the Louisiana State Medical Society is undoubtedly the most important and significant event in its long, varied and tempestuous centennial history. It was indeed very fortunate that a surplus over the expenditures of the New Orleans committee of arrangements in charge of the American Medical Association meeting in 1920, became available as a basic fund to negotiate the purchase of the *Journal* from Dr. Chassaignac, who was then the sole proprietor. Here, it is fair to say that Dr. Chassaignac himself was in full accord with the group of leaders of Orleans Parish and the state, who believed in the need of an official organ for the de-

velopment of the State Society, and it was his own conviction on this point in addition to his need of rest, after 25 years of editorship with Dyer, that prompted him to make the terms of the purchase as reasonable as possible. The transaction by which the Louisiana State Medical Society came to the possession of the *Journal* will remain a performance of enduring credit to the intelligence, long vision and statesmanship of all the parties concerned, but more particularly to the merit of Drs. Albert E. Fossier, chairman, Paul Gelpi, and T. J. Dimitry, who constituted the executive committee of the original committee of arrangements for the New Orleans meeting of the American Medical Association in April, 1920.

The benefits that have accrued from this monumental transaction for the future prosperity and welfare of the Society are incalculable. The *Journal*, after a century of service to many varied causes and surviving many perilous adventures, has at last found a solid base upon which to rest and build a superstructure that will insure the continuity,—if not the perpetuity—of its existence; and will be given a constant capacity for expansion in service without fear of interruption from changes in the lives and fortunes of the men who may be at the head of its administration. It is no longer the organ of a party, special group, institution or society, but it is the voice and loud speaker for the entire medical profession of the state, and like it, is provided with the necessary means and mechanisms for the perpetuation of its existence. Quoting Dr. Chassaignac, in his valedictory in parting from the *Journal*, "Since this periodical has become an integral part of the State Society it may expect to work successfully, progressively and continuously, and like Tennyson's brook, it may murmur as it flows:

'Men may come and men may go,
But I go on forever.'"

EPOCHAL VICTORY OF 1905

The year 1905 was signalized by an epochal event fraught with the greatest significance for the welfare and prosperity

of New Orleans and of the far South, for it was in that year—for all time memorable—that yellow fever was stamped out and definitely banished, not only from New Orleans, but from the North American continent. This was done by repeating the culicidal (anti-mosquito) campaign that Gorgas had proved so effective in ridding Cuba and Panama from Yellow Jack in 1900. In this campaign the principle of mosquito destruction had been carried out on the basis of the experimental work of Finlay and of the Reed Commission in Cuba. This brilliant sanitary victory was followed by an unprecedented era of prosperity in New Orleans and in the whole south-land. It led to a rapid increase in the population and a vast improvement in the sanitary condition of the city by reason of a new and pure water supply and an efficient system of drainage and sewerage which had never existed before. All these were powerful factors in improving the reputation of the city for salubrity.

CIVIC REGENERATION OF NEW ORLEANS SINCE 1905

The victory of 1905 had the immediate effect of inspiring confidence in New Orleans and the whole Southern seaboard. It was the great sanitary victory in 1905 that put spurs to the civic regeneration which we contemplate with so much pride today. For it is the salubrity of New Orleans that has increased its population and added enormously to its prosperity. It is the absence of pestilence and the security against its occurrence that has justified the establishment of the great shipyards, aeroplane, chemical, oil and other great industries which the government has found it advantageous to encourage and develop for the successful prosecution of the war. Likewise, the great Army and Navy hospitals and their military dependencies, have so completely transformed the physiognomy and life of the city, especially since the great commercial enterprises, following the lead of the government, have recognized the strategic value of New Orleans for commercial as well as for military purposes. It is the commanding position of the city for

the development of rapid inter-American business, social and, not the least, *medical* relations, with our neighbors across the seas and over the land, South of us, that assures that our prosperity is definitely enduring and progressing.

NEW ORLEANS DESTINED TO BE GREAT MEDICAL CENTER

It seems to me inevitable that New Orleans, by virtue of her topographic, geographic and ethnographic, as well as commercial and industrial advantages, will become the greatest medical center in the Western Hemisphere, if not in the world, provided our city, state and federal educational medical and allied institutions, and, above all, the profession itself,—will not only see the golden opportunity, but make sure to seize it when it comes.

The stress laid on the future expansion of New Orleans in the postwar as a medical center applies with special emphasis to the future of the *New Orleans Medical and Surgical Journal* as the organ and loud speaker, as it were, of the organized medical profession of Louisiana; as the oldest and sole purveyor of authorized information regarding the activities of the medical profession and of medical progress, to our own and the outside world.

THE JOURNAL, ITS PAST AND FUTURE

The Journal is, and always will be, when properly conducted, the best exponent of the culture, intellectuality and the progressiveness of the profession that patronizes and supports it. In this connection, I have in mind the literary and scientific quality of the original contributions that now appear in the Journal as compared with the relatively lean papers contributed even as late as twenty-five years ago. It was, of course, unavoidable that the medical literature of the South after the Civil War, and even until the eighties and nineties—long after the country had been purged of carpetbaggers—could not come up to its own pre-war high standards of scientific and literary merit, and, much less, compete with similar publications that were edited and published in the North, in the great library centers of the United States. The cause of

the retarded development of medical literature in the South was the lack of educational requirements for advanced study in laboratories for research in medicine, as well as the lack of library facilities for bibliographic study. Until the last twenty-five years, any attempt to work up the bibliography of an important subject compelled a trip to Washington or any of the great cities of the North and West to look up the references that our small and relatively insignificant college libraries could not supply. In consequence of this penury of library nutriment, the papers read at societies and the discussions that followed, were in the majority too superficial and lacked enough substance to give them sufficient interest or value for quotation or publication. Today, the situation is completely changed. A change, that I am happy to say, is particularly noticeable here in New Orleans, not only in the library, but in the merit of the articles published in the *New Orleans Medical and Surgical Journal*. In fact, there is a general renaissance in the quantity, quality and value of the papers read currently at our medical meetings, and that are abstracted and quoted in our periodical exchanges. It is, of course, the scientific and literary quality of these papers as they are read at our Parish, State Societies, and at staff meetings, that give value and importance to the Journal, and it is upon the continued endowment and financial support of our libraries of Tulane, Orleans Parish and Louisiana State University that the future rating and reputation of our local and regional profession in its cultural, professional and technical attainments (as exhibited in the columns of the *New Orleans Medical and Surgical Journal*) will depend. Since books are the indispensable tools of the doctor, let us see here in New Orleans that they are kept adequately supplied at our libraries.

Furthermore, if New Orleans is to be the great rendezvous of the intellectual, as well as the commercial and industrial world of Latin-America, let us see that it is made attractive to scholars, the medical particularly,—so that they may flock here, as we

did ourselves, years ago, in making pilgrimages to Washington, our bibliophilic Mecca.

* * * * *

In justice to the editorial management of the Journal, it is only fair to state that the Journal has never attained a greater level of prosperity than it has since its ownership by the State Society. Its first editors under State Society ownership, Gelpi then Walther, both young but each carrying a great burden of responsibilities, gave the best of their energies to improve on the work of their predecessors and the Journal advanced during their administration,—best proof of their success.—They did their work nobly!

Dr. Musser's editorship, which he has held for 17 years since 1927, deserves special praise for piloting the Journal with remarkable success during one of the most difficult periods in our local history when the atmosphere of Louisiana was thick and murky with political intrigue which had penetrated the medical profession and its leaders were divided by political partisanship which was aggravated by the creation of a new medical school. It was at this juncture that the Journal, as the representative of the State Medical Society and of the profession as a whole, and not of any one of its parts, maintained an aloofness from party disputes and controversies with a dignity, fairness and judgment in its editorial utterances that kept the Society above the squabbles that for a time threatened its usefulness and even its disruption. This alone is an achievement that is worthy of the greatest praise. But, apart from this invaluable service, it is to the credit of Dr. Musser and his assistant, Dr. Wirth, and associates, that the Journal has never enjoyed greater material prosperity or a higher reputation as an index of the scientific, technical, cultural progress of the medical profession in Louisiana than at present. And nothing is better proof of the excellence of its administration than the frequency with which its publications are quoted and reproduced with evident regard for the authority and value of its edi-

torial utterances by its most distinguished contemporaries.

SOLE SURVIVOR REMEMBERS

Having touched upon the history of the Journal and on the men and events that have built the solid foundation on which it now rests, and having referred to the viscissitudes and trials that it has survived to reach the pinnacle of the success it has attained since it has become the voice of the organized profession of Louisiana, I trust I may be permitted a personal word of thankfulness and praise to the departed friends and pioneers whose names are indelibly identified with the making of the Journal as workers in common sympathy with its mission and with its purpose.

It has been my good fortune to have known all the editors who flournished since the post bellum period in the late seventies, after the ban of reconstruction had been lifted from the people of Louisiana. This list included my honored teachers, Bemiss, Chaillé, Richardson, Logan, Souchon, Miles, Herrick—all of these except Warren Stone, who had passed away in 1872, long before my entrance into the medical school. My contemporaries and associates, the elders of the eighties, who represented the New Orleans Medical and Surgical Association during my incumbency,—Holliday, Watkins, Loeber, Salomon and Godfrey,—all eminent citizens and deeply attached friends, and then my younger contemporaries and associates of the Polyclinic Group—McShane, Parham, Lawrason, Bruns, Archinard, J. Bemiss,—and Miles (the most brilliant stalwarts of their day) ; and, finally, Chas-saignac and Dyer, leaders in the same group, who were the nearest to this centennial celebration,—*they, one and all, have passed away*, leaving me alone at the head of a vanished parade of veterans standing at attention to salute the passing column of the younger officers of the future editorial guard, moving to the front to replace us (or *me*,—the last relict of the old guard), in leading this great enterprise to its immeasurable destinies. It is indeed impressive, and the saddest experience of a long life, to find that, as the march of the

years goes on, the mile-stones become head-stones, and that the head-stones thicken as we move on and "life's midstage we tread." As we tread still further we find under each head-stone, a friend. Still further, as we tread along life's winter-way, we feel the ice growing thin below our feet, and all around us and behind us, we see our contemporaries going through!

* * * * *

AVE ET SALVE ATQUE VALE!

With the heartfelt assurance of the great satisfaction with which I enjoy the privilege of participating in the centennial of our Journal, and the third anniversary in which I have addressed congratulations to its editors—all my friends and associates—I will close with the familiar Roman salutation: *Ave et Salve atque Vale!* Hail and Welcome to the dawn of the new century in the life of the *New Orleans Medical and Surgical Journal*, and farewell to the old with grateful memories. Born in a world of strife, the Journal inaugurates the second century of its birth amid the distant roar of battle and the anguished cries of a tortured humanity. May it rise out of the fire and ashes of war, ever triumphant over the forces of evil, to greet the glory of a new sun, radiant with the promise of peace and a surcease of pain for a suffering and bleeding world.

—————o—————

THE EARLY HISTORY OF THE NEW
ORLEANS MEDICAL AND
SURGICAL JOURNAL

A. E. FOSSIER, M. D.
New Orleans

The period of the eighteen forties records a glowing chapter in the history of New Orleans. That decade really saw the transition of a small village situated on an insalubrious swamp, to a metropolis which focused on itself the attention of the civilized world. That rapid transformation was actuated partly by the Louisiana Purchase, and to a greater extent by that glorious victory achieved on the swamps of Chalmette, and to the advent of the steamboats plying the murky waters of the Mississippi river. Louisiana, once a colony, a pawn of

France and Spain, practically over night became a proud and wealthy section of the United States. Its people, although few in number, longed for freedom, and smarting under bondage fought for their independence. The blood of its martyrs shed for liberty emblazon many pages in its history. Prior to the Louisiana Purchase its inhabitants were essentially Latin. Even then New Orleans had achieved an enviable reputation by reason of its wealth, culture and refinement. It was frequently referred to as the "Paris of America"; an encomium, under the circumstances, of a rather ambiguous nature.

Immediately after General Jackson's glorious victory the invasion of New Orleans began. Attracted by its favorable geographical position, the richness of its soil, its extensive commerce in close proximity to the great markets of the world, its easily acquired fabulous wealth, countless numbers of Americans, mostly Anglo-Saxons, invaded that city. They regarded New Orleans as a foreign city, and disdained its indigenous population. The puritanical New Englanders could not reconcile themselves to the ways and ideologies of the Catholic Latins. It was inevitable that in that polygot city, in which the majority were adventurers and fortune seekers, from every country of the world, and malcontents and refugees from the then chaotic Europe, would result a continuous conflict of ideology.

The population of New Orleans was then divided into two component races, the French and the English speaking peoples. Because of differences of nationality, culture, mannerism, ideals, religion and language, they continually clashed, and the antithesis engendered a mutual misunderstanding. It is therefore not astonishing that the City was then a seething cauldron of intolerance, abuse, discrimination and distrust. It is also true that the same conditions existed in the medical profession. The Medical Societies of that time were composed either of Creoles and French speaking physicians, or of doctors of Anglo-Saxon extraction. Therefore it was also

inevitable that the physicians of that time should share the prejudices and dislikes of their fellow townspeople.

The history of the profession is replete with instances of criminations and recriminations of the French and English speaking doctors. The former were well established in their profession and enjoyed an enviable reputation in the community. They were well educated and graduates from renowned European Medical Centers, and were models of culture and refinement, but because of a fear of failure they lacked the initiative of the entrepreneur; they were likewise the victims of their own self complaisance. Many of the latter; perhaps not so well versed in the humanities, or never having had the privilege of walking the wards with the great masters of Europe, more than made up their supposed deficiencies by their industry, boldness, vision, versatility, initiative and acumen. They were the medical promoters of their time. In that terribly complicated period the disunity was so great, that they not only disagreed on many vital personal and professional matters, but also aired their differences in the newspaper columns.

Despite this hodgepodge of wild debauchery, chicanery, intolerance, uncouthness and lawlessness then existing, the respectable element of the population maintained the decorum, refinement and culture, which have been the chief moulding influences on New Orleans. Among the most influential leaders for the moral and intellectual uplift of the community were the physicians. They were not only skilled practitioners, but learned in the allied sciences and pseudo-sciences. Many achieved fame for their knowledge of botany, mineralogy, meteorology, philosophy, especially of metaphysics, and even phrenology. Their learned and eloquent disquisitions delighted the admiring audiences of the many Lyceums.

Because of disunity in the profession its irreconcilable differences were voiced in the newspapers; unfortunately, all too frequently with vindictiveness and intolerance. These diatribes may seem to us uncalled

for and puerile unless we evaluate their motives and provocations in accordance with the customs of the time.

An interesting chapter in the medical history of our city is the controversy relative to the founding of the Medical College of Louisiana in 1834. The unexpected announcement created quite a furor. It provoked acrimonious discussions not only by members of the medical profession, but among the educated public as well. The necessity of the *modus operandi* for the formation of the new school, as well as the personality and the qualifications of the members of its faculty, were the subjects of controversies in the home, on the streets, in the exchanges, in the coffee houses, and also in the newspapers. The announcement of a faculty composed of English speaking physicians, a few of whom had only recently arrived in the city, incited the expression of acrimonious opinions. Communications from polymics appeared in the press. Strenuous objections were voiced against the establishment of the college without first procuring the sanction of the Legislature or the authorization of Congress. It was also evident that the idea of "self appointed professors" was distasteful to many members of the local profession. The very youth of many of the organizers of the College was the subject of rancorous discussion. Despite the strong opposition the organizers of the Medical College, with undaunted determination, persisted in their efforts, which were eventually crowned with success. Again the alacrity of the pioneer triumphed over the staid enthusiasm of the Old World, for the college built on a tottering foundation is now Tulane University.

Another example of disunity was the expulsion of Dr. Luzenberg from the English speaking Society, the Physico-Medical. Dr. Charles Aloysius Luzenberg was one of the founders of the medical college, and its first professor of the Principles and Practice of Surgery. He was not only expelled, but was most brutally censured by the Society. His character, his honor, his veracity and his professional conduct and ability, were

publicly attacked and defiled. No greater insult could have been cast on any man. The Luzenberg is the *cause célèbre* of medical ethics in this country. The scandal caused the profession the loss of public respect and confidence. Under its impact a well established and learned medical society, the Physico-Medical, disbanded, friends became mortal enemies, cartels were exchanged, and for many years the doctors were divided into two camps, bristling with animosity and distrust.

The years 1830 to 1850 were the golden era in the history of medicine in New Orleans. It is true that in that period the greatest possible dissonance existed in the profession, yet it was the most prolific in medical progress, for not only was a medical college founded, but the first medical journal in the South was established. New Orleans became a medical center which contributed greatly to the education of physicians throughout the whole Southwest.

On May 15, 1844, the first issue of a periodical made its appearance, under the name of The New Orleans Medical Journal devoted to the Cultivation of Medicine and the Allied Sciences. It appropriately took for its inspiration and motto the famous saying of Galen "*Summum Bonum Medicinæ, Sanitas.*" Its promoters were Drs. Erasmus D. Fenner and A. Hester.

The difficulties, obstacles and discouragements encountered by Drs. Fenner and Hester, all almost unsurmountable, are a lasting monument to the memory of two great men. To no one is the quotation "the way to fame like the way to heaven—through much tribulation", more applicable.

Their adventure in the realm of medical journalism reads like fiction. In 1850, Dr. Fenner, the editor of the Southern Medical Report, long defunct, gives the following pen picture of the difficulties encountered in the establishment of the New Orleans Medical Journal. He wrote:

"In January, 1844, Dr. Hester and myself, both then in rather desperate circumstances, embarked in an enterprise which has proven to be of no trifling importance to the Medical

NO. 1.

THE

NEW-ORLEANS MEDICAL JOURNAL,

DEVOTED TO

THE CULTIVATION OF MEDICINE,

AND THE

ASSOCIATE SCIENCES.

(BI-MONTHLY.)

ARRANGEMENT.

- 1.—Original Communications, Cases, and Surgical Operations occurring in Private Practice.
- 2.—Health of the City, with Reports from the New-Orleans Hospitals.
- 3.—Periscope of Practical Medicine—or Spirit of the Medical Journals, Foreign & Domestic.
- 4.—Brief Notices of Recent Medical Literature.

EDITED BY

ERASMUS D. FENNER, M. D.

AND

A. HESTER, M. D.,

One of the Physicians to the New-Orleans Charity Hospital.

"Summum bonum Medicinæ Sanitas."
(GL.)

MAY 1844.

NEW ORLEANS.

PRINTED BY A. DEL.

Profession throughout the Southern States; we allude to the establishment of the Journal. Happening to be thrown together in the City of New Orleans and finding our fortune alike

desperate, 'a fellow feeling' gave rise to an intimacy between us which it is hoped will endure through life. Without money, with but few acquaintances, and dependent on a precar-

ious practice which barely afforded the most economical support, we determined to project the hazardous adventure of a Southern Medical Journal and trust to the liberality of the medical profession for its support. The field was ample, rich, and entirely unoccupied, but it was difficult to see how the experiment could succeed without having one cent of capital to start on. We actually had the Prospectus printed on credit, one of our booksellers being willing to go that far at all hazards, and we paid the bill, eleven dollars, out of the first spare money we had. The Prospectus being out and distributed throughout the country, we were fairly committed to bring out the work, but, as yet, could find no person willing to undertake the publication. All we had to give was our own labor, which was cheerfully offered, but something more substantial was required. We appealed to the booksellers, to the proprietors of the city newspapers, and, finally, to the Medical College and leading physicians of the city, for a guarantee of five hundred dollars, but all to no purpose. The enterprise was conceived in poverty, and poverty brought it forth! At this stage of our gestation, we had the good luck to come across a poor French printer, who had a handful of type and nothing to do. Him we persuaded, by means of flattering promises, to bring out the first number; and thus the New Orleans Medical Journal saw the light! Each number made to pay its own way, but left no surplus on hand."

These pioneer editors modestly proclaimed their qualifications and their enterprise, and boldly announced the policy of the new Journal in the following:

"We have been raised in the Southwest, our professional career has been chiefly in the South, and we can assert an experience of fifteen years in its peculiar maladies. We therefore have a right to declare that the dis-

eases of the South can only be studied and learned in the South. The elements of the profession; Anatomy, Physiology, Pathology, General Therapeutics and Chemistry, may be studied to perfection in the Capitols of Europe and the United States; but what Southern Practitioner will deny, that when he obtained his diploma and came to grapple with the Congestive and Yellow Fevers, and the Milk-Sickness and other serious affections of the West, he had to commence his observations *de novo*, and to establish for himself, a new code of Principles and Practice. . . . We repeat; it is in the South we must study Southern Diseases. . . . We certainly hope that the Journal we are now projecting will give a fresh impulse to Medical Study and investigation, . . . that it will be the means of combining the isolated and disjointed labours and observations of the numerous talented Physicians in the Southern States into a form possessing strength, symmetry, and usefulness . . . and that it may awaken the Southern Physician to a just appreciation of the profession he has chosen. In fine, that it may elevate the Medical Profession from the State of a mere money making trade to its proper position, the ablest pursuit ever to engage the attention of man!"

"Then let us cease all bickerings, ignoble jealousies and rivalries," they admonished and wisely exhorted that they be "ever ready to extend a helping hand to our brother who occupies a lower round of the enchanting Ladder of Fame; and congratulate, instead of envying him whose brow is justly crowned with the never-fading laurel."

They pleaded for better Legislative control of the practice of medicine, and deplored the laxity in the observance of the existing laws. New Orleans was then the haven of quacks, mountebanks, and nostrum vendors of all kinds. The newspapers were replete with their advertisements and extolled their extravagant claims. The peo-

ple were readily gulled by these unscrupulous scoundrels.

"Let then be unmasked; and let show to a liberal though most gullible public, our superior claims to their confidence and respect" they counseled, and with the zeal of evangelists they exhorted, "this can only be done by correct deportment, constant study, and a display of superior acquirements. True merit, though long obscured and depressed, seldom fails ultimately to obtain its just deserts, and if we do not possess it, we have no right to demand consideration and respect."

They warned their colleagues that the profession had for some time lost caste and respectability in the South, that unworthy and incompetent practitioners were constantly gaining admission into the ranks, and that charlatons and empyrics annually found it less difficult to compete with the licensed physicians.

"It behooves us carefully to investigate the cause of this state of things, and to make a grim and united effort to remedy it" they admonished and bluntly observed that, "otherwise we ourselves, after the long years of labour, and the expense which we have devoted to the Profession, will be driven to the necessity of seeking some other method whereby to gain a livelihood; or to condescend to those miserable devices peculiar to a low station which the public seem disposed to assign us. Genius and Talent will abandon Medicine to the Gothic invasion of Quacks and Imposters, and seek employment in higher walks and better company. This is the destiny that awaits us, and the crisis is at hand." With the enthusiasm of crusaders they pledge to "throw themselves in the breach, and make at least one bold, determined effort to rescue their profession from its impending fate."

Their campaign was a bold and determined one. They fearlessly accused the Medical Board of being "amenable for all the mischief that may result to the public health from this indiscriminate, . . . the wholesale . . . vending of 'villainous compounds' and highly concentrated extracts.

Into their hands the best interest of this community, its health . . . and the honor and integrity of the medical profession are committed. Will they prove recreant to the welfare of science, and indifferent to the just claims of humanity. Can they remain supinely inactive, and view with blush of shame, the emblems of quackery suspended at almost every turn of the streets? Let the members of the Board arouse themselves in the work of reformation and purgation, let all who are not licentiates of the Medical Jury, or who have no well-founded scientific claims in the healing art be subjected to the fines and forfeitures of law."

Evidently their crusade was bearing fruit, for in the September 1846, issue of the *Journal*, they editorially expressed their satisfaction that the Board had "at last awakened to a sense of its duties, and were determined to have the laws for the regulation of the medical profession carried into full effect." The names of all physicians, apothecaries, and midwives, were published in the city newspapers, and all those failing to comply with the regulations were prosecuted with the utmost rigor of the law. That list contained the names of 194 physicians, 50 apothecaries, and 12 midwives. The Eastern Board was composed of Dr. J. Labatut, President; Mr. P. A. Bertrand, Secretary; Drs. W. Stone, J. Jones, A. Lambert, H. Landraux, A. H. Cenas, and Mr. P. L. Massay.

It is originally intended that the *Journal* would be a quarterly, but the promoters heeded the advice of their friends and made it a bi-monthly periodical.

It may be relevant to mention that the first contribution was translated from the French. It was an essay read by Dr. Beugnot at a meeting of the Louisiana Medico-Chirurgical Society in September 1843. It was an essay on yellow fever. In reality, it was a vindication of the controversial views held by Dr. Luzenberg on the treatment of that disease. This article added fuel to the flame of resentment then existing. It took courage and extreme boldness on the part of the editors to publish it in their inaugural edition. In an editorial

footnote they made the following statement:

"We have published all that contains his (Beugnot) own views, and we can testify that in these, some of the ablest Physicians in New Orleans fully concur. On the other hand, we must declare that they are condemned by a large and respectable class. It is for the Profession, and not for us to decide upon the merits of the paper, and without further comment, we submit it to the readers."

The Professors of the Medical College were repeatedly invited to contribute articles, yet all these solicitations seem to have been ignored by them, but for the sole exception of Dr. W. W. Carpenter.

In the early nineteenth century there were many physicians of culture and learning, both in New Orleans and in the Southwest, fully capable of making sound contributions to the art of medicine. There were many pamphlets and monographs which attracted even European attention, or were published in European journals. A New Orleans practitioner, Dr. Michael Halphen, was made a Corresponding Member of the Academy of Medicine of Paris because of his learned dissertation on the Etiology of Cholera.

That there were good writers and profound thinkers among the physicians of the South cannot be gainsaid; the early files of the Journal attest that fact. Some of their contributions were masterpieces. While these savants did not enjoy our scientific advantages, the clarity of their deductions, the astuteness of their observations, their *coup d'oeil médical*, their judgment, their courage, and their boldness, made them great doctors.

The Journal was a great factor in encouraging a higher standard of medical education. At that time there were no less than four medical colleges in the South, whose halls were annually attended by students, and which were granting diplomas from year to year. Its editorials exhorted these colleges "to come forward and let the world see the extent of their pretensions", and

asked if they have "assumed the awful responsibility of becoming teachers in medicine for the sole degrading object of making money", and bluntly queried if they would "sacrifice the noble attribute of science upon the altar of Mammon". They expressed the faint hope that these young professors would prove worthy of their calling, and trust that the Journal would render "an admirable medium for comparing the merits and abilities of the Professors of the medical colleges of the South and West."

From its very beginning the Journal became the official organ of medical societies throughout the South. Many of its original publications were splendid contributions read before the Mobile Medical Society. Its first volume contains forty original papers; eleven of which were from writers in New Orleans, thirteen from Mississippi, eight from Alabama, and one each from Cuba and Jamaica.

Under the circumstances the New Orleans Medical Journal was rather pretentious as to size, its early numbers approximating 124 pages. Its arrangement was ideal and informative. It was divided into four sections, namely: Original Contributions, Cases and Surgical Operations occurring in private practice; Health of the City, with reports from New Orleans Hospitals; Periscope of Practical Medicine, and Brief Notices of Recent Medical Literature. The Periscope of Practical Medicine was a postgraduate course in itself, for it covered, in a concise and masterly manner, the best contributions to the science of medicine from the world over. The book reviews were well studied, comprehensive, illuminating and extensive, and could well be used as a model by our reviewers of to-day.

The New Orleans Medical Journal retained its name until September, 1845, when it was renamed The New Orleans Medical and Surgical Journal. An announcement to that effect was made in the issue of that date, it reads in part:

"Having united the interest of the New Orleans Medical Journal and the

Projected Louisiana Medical and Surgical Journal, we owe some explanation to our respective subscribers. We have taken this measure with the belief that the general interests of science and of the profession may be fully served by one periodical, which, by the concentration of our materials and labor, we hope to render fully adequate to the demands of an enlightened public, and highly satisfactory to all our subscribers."

We cannot presume that this amalgamation was due to any inadvertency on the part of Drs. Fenner and Hester, nor that they willingly would seek the combination of their Journal, by then fairly well on the road to success, with a prospective medical journal. Fortunately the veil of secrecy can be partly lifted on the motives which actuated the merger. In 1850, Dr. Fenner gave us an inkling of what took place behind the scenes, in the following terse statement, he wrote:

"In this manner we struggled through the first volume and were entering upon the second with prospects somewhat improved, when an unexpected rival appeared in the field. The Professors of the Louisiana Medical College issued a prospectus announcing the early appearance of a new medical journal from their school."

The whole transaction smacks a bit of chicanery on the part of the Professors. Dr. Fenner tells us that he applied to the Medical College for an advance of five hundred dollars to launch his journal without success. Evidently they thought that the venture was doomed to failure, and underestimated the ability and the determination of these young editors. May we not surmise that the projected journal was used as a wedge to gain control of an already well established periodical? Well did Drs. Fenner and Hester know that whilst one medical journal could survive and prosper, that the field was limited in its scope, and not large enough to support another, two would be doomed to failure. Evidently they were the unwilling victims of the machina-

tions of their colleagues. Drs. Fenner and Hester were then joined by Professors W. M. Carpenter and J. Harrison in the publication of the Journal.

In the issue of March 1, 1848, Dr. Fenner announced his withdrawal from the editorial staff. In part, he wrote:

"Having been one of the original projectors of the work, and laboured assiduously to maintain it for a period of four years, it may readily be supposed that he would feel like a parental regard for its success. . . . When the undersigned and his first colleague (Hester) projected the work there was not a single journal published in the United States, south of Kentucky. They had but recently settled themselves in New Orleans and were but little known either to the citizens in New Orleans or the physicians of the place."

The following sentences of his valedictory are a reverberation of the forced amalgamation of the Journal with the projected Louisiana Medical and Surgical Journal, they read:

"Not being aware that any abler hands would undertake it, they resolved to make the experiment; their chief reliance being upon an earnest to do good, and a firm determination to exert themselves to the utmost. There is a solace in the bare effort to do good, even though it should not be crowned with success. So far as the undersigned is concerned, this has been almost his only reward for the labor spent upon his work."

He expressed his gratification that the Journal was established on "a firm basis and occupied a respectable rank among the periodicals of the day." He recalled his eloquent supplications to the physicians of the South to write, and again reiterated that "we did this from the conviction that if we could persuade them to attempt to write, their *amour propre* would prompt them to study more, so as to qualify them for writing well. The Medical Profession of the South commands no inconsiderable

portion of the finest talent of the Country, but it needs to be stimulated into active operation. There are now four Southern Medical Journals, which we hope will exercise a most beneficial influence in this way."

Drs. Carpenter, Harrison and Hester, his erstwhile co-editors, expressed their regret for parting with their colleague, and predicted that his retirement would soon be followed by that of others. They regretted the fact that the Journal did not have the necessary support from the profession of the South, and frankly confessed that "of pecuniary compensation there has been none, . . . on the contrary, some of them have expended sums for which they have received no reimbursement." They also bluntly declared that "the Editors cannot be expected to do this; . . . they cannot be expected to work and pay for their work."

Dr. Carpenter severed his editorial connection in July 1848, supposedly to retire to the country for the summer, and in less than two years he had passed to his heavenly reward.

Dr. James Jones tells us in his *Memoir of the Life, Character and Writings of the late Prof. John Harrison*, the following interesting anecdote, we quote:

"In 1845, Dr. Harrison entered upon a new field, by the association of himself and Dr. Carpenter with the original editors of the *New Orleans Medical and Surgical Journal*. They both contributed largely to this respectable periodical. To the former, it was indebted for several papers, and for various able reviews, and admirable selections and translation for the miscellaneous department, which added greatly to its circulation and general reputation. So justly were his labors in this department of Medical literature appreciated by his colleagues of the University (the Medical College) that on expressing a desire to retire from his editorial duties in January 1848, they offered a voluntary contribution of \$500.00 per annum as an expression of the estimation of his

services, the publishers offering an equal amount."

Evidently because of ill health he must have remained steadfast in his determination to sever his editorial connection, for his name appears for the last time, as editor, in the issue of November 1848. Dr. Harrison died, in the forty-first year of his life, on the morning of March 19, 1849.

On February 7, 1849, the Journal was sold to Messrs. Weld and Co., and Dr. Hester, who then became its sole editor, and shortly afterwards, its only proprietor. He edited, published, managed, and defrayed all its expenses till the day of his tragic and untimely death from epidemic cholera on December 1, 1853.

Again Dr. Fenner reassumed the editorship of the Journal, which, for some unknown reasons, in a very short time, he had to relinquish. In the issue of March 1854, he voiced his disappointment in the following statement:

"From the fact of his having been one of its original founders, he confesses to have ever felt a sort of parental interest in its successful progress. Indeed, in accordance with the wish expressed by many subscribers, he was willing again to become its Proprietor and Editor, if this could have been affected upon reasonable terms; but it has been ordered otherwise."

He then made the announcement that he was gratified to know that the editorship had been entrusted to such able hands, as Dr. Bennet Dowler, "a man too well known to the Medical Profession of the United States to require either introduction or endorsement on the present occasion."

Upon assuming his new duties, Dr. Dowler, in his salutary address, proclaimed his policies, we quote:

"While the incoming Editor claims for himself no exception from prejudice, bias, and error, he has the wish, the will, and the expectation to make this Journal, as far as in him lies, an independent, impersonal, distinterested, and catholic one in which the friends of science may meet on a common plat-

form . . . instructing and receiving instruction . . . conferring and receiving honors, by promoting the best interest of humanity, namely, the healing of the sick."

He also announced that the accomplished widow of Dr. Hester was the sole proprietress of the Journal, and that she had appointed as her agent, Mr. W. P. Johnson, an able accountant, at the Picayune office, 66 Camp street.

For ten lean years the Journal ran the gauntlet of every possible misfortune; poverty, forced sale, total loss by fire, and the untimely death of its editors, save one. Only the stoutest of heart, and the most determined of mind, could have persisted in a determination to achieve a prosperous objective.

The number of its subscribers increased from 500, three years after its founding, to nearly 1000 seven years afterwards. It then had readers from Louisiana, Alabama, Mississippi, Texas, Kentucky, Georgia, Arkansas, Maryland, Virginia, New York, Ohio, Pennsylvania, South Carolina, Virginia and Illinois.

Its early files were a veritable epic of the adversity, suffering, and discouragement, as well as of the fortitude and heroism of a community subjected to the most direful calamities the world ever experienced. Death in its most hideous aspect ever confronted the physician, for armed, as he was, with limited knowledge, he was impotent to stay its ravages. Yellow fever, cholera, typhus, typhoid, malaria, and other preventable diseases, not only depleted the ranks of its inhabitants, but dwarfed its growth by discouraging prospective emigrants from seeking the city as a home. In the issue of May 1849 is published Dr. Bennet Dowler's authoritative estimate of longevity of the population of New Orleans of the late forties, we quote:

"If the unacclimated portion of New Orleans be reckoned at one fourth of the entire population, this fourth will probably furnish the half of the annual mortality, and consequently the mean length among Creoles, will be

greatly diminished. Thus if the mean life of Creoles be 45, while that of strangers is only 25, the average life of New Orleans will be only 35."*

Our former confrères had a great responsibility, and yet little they could do to protect their patients, friends, and families, yea, even themselves from these yearly holocausts. It is no wonder then that the Journal was dedicated to the study of the devastating diseases of the Southwest.

The Journal was really dedicated to Medicine and the Collateral Sciences. Among many worthy contributions may be singled out Harrison's Essay on Yellow Fever, which found universal commendation and posthumously was ordered to be reprinted by the Physico-Medical Society; J. L. Riddell's papers on "The Science of Medicine with Its Relation to Botany", and also, "The Probable Constitution of Matter, and Laws of Motion as Deducible from, and Explanatory of, the Physical Phenomenon of Nature"; Carpenter on "The Periodical Maturation and Discharge of the Ova, in Man and Other Mammiferæ"; Albert Wellen Ely's, "An Examination on the Riddellion Philosophy"; Bennet Dowler's "Researches on Meteorology", and the meteorological tables of Lillie, and P. H. Lewis' history of Yellow Fever in Mobile.

Of the many historical essays which adorned the early volumes of the Journal, the most interesting is the one from the pen of Doctor Lewis of Mobile, Alabama, "The Medical History of Alabama", which was published serially by that publication. It was the object of vitriolic criticisms from Dr. Wm. M. Boling, of Montgomery, Alabama. It provoked a feud which lasted for more than eighteen months, and was only terminated through the intervention of the Editors. They wisely closed the incident with the following interesting words:

"Our readers are, no doubt, aware that for some time past critical remarks from the pen of Dr. Boling of Montgomery, on the Medical History of Alabama, written by Dr. Lewis of Mo-

*(Now it is nearly 65).

bile, has appeared in the pages of this Journal. We think these gentlemen should now be satisfied, as the subject has assumed rather a controversial than a critical turn . . . and we fear no good either to the Profession or to the parties engaged, will result from its continuance. Both have written with much power and ability, and we beg them to turn their minds to other subjects.

"There has evidently been manifested throughout the controversy, considerable irritation, and we hope the subject, with any ill-feeling that may be engendered, will be forever buried."

Mirabile dictu, a silver cup was unanimously awarded to Dr. Lewis, for his historical essay, by the Alabama Medical Society, on December 7, 1846.

For seventy-eight years the Journal had a very precarious existence. During all these years strong competitors invaded its field, yet, it not only survived, but prospered. It was predestined to a long successful existence. Its future is now assured for it is the property of the Louisiana State Medical Society. This was made possible by the Local Committee on Arrangements of the Convention of the American Medical Association Convention, held in New Orleans, April 26-29, 1920.

Perhaps after a span of twenty-two years it may not be inappropriate to raise the curtain on the scene of that transaction. The Committee, after all expenses, for entertaining the Convention, were paid, had a surplus of more than four thousand dollars. Through the indefatigable energy of its Finance Committee it had been successful in soliciting a considerable sum from the business interests of the City. Whilst it is true that some of the physicians of the City and State were generous in their contributions, yet they amounted to only a fraction of the aggregate, especially after all subscriptions exceeding ten dollars were refunded to the donors.

The disposition of that fund became a controversial issue. The question was

raised by both the Louisiana State Medical Society and the Orleans Parish Medical Society as to the right of its disposal by the Committee. The executive bodies of the two Societies even passed many resolutions demanding that the money be turned over to them for various specific objectives. All of them were emphatically turned down by the Committee, because they, and they alone, had the right of its disposition. The following letter written to Dr. P. T. Talbot, Secretary of the Louisiana State Medical Society, dated May 5, 1922, is self-explanatory relative to the wishes and the prerogatives of the Committee. It is copied in full:

Dear Dr. Talbot:

I am in receipt of your communication of April 21, 1922, advising me as to the action of the House of Delegates of the 1922 Session of the Louisiana State Medical Society, relative to the disposition of surplus funds held by the Local Committee on Arrangements, A.M.A., 1920 Convention, held in New Orleans, of which I am chairman.

It seems that the governing body of the Louisiana Medical Society did not understand the status of the Committee; that it was not a committee of the Louisiana State Medical Society nor of the Orleans Parish Medical Society, but only a committee of the American Medical Association and to the American Medical Association responsible. Therefore, the resolution in question was entirely out of order.

In explanation of the delay I beg to state that this Committee has had under serious consideration since the A.M.A. Convention, the fair and just disposition of the fund in their care. We wish to donate this fund for what we consider to be the greatest benefit of the organized profession of the whole State. The subject of "Circulating Library" was found impracticable.

I beg to submit to you the enclosed resolution adopted by the Local Committee on Arrangements, and unanimously approved by all the Chairmen of the Sub-Committees at a meeting held April 22, 1922, at the Chess Club. The following gentlemen were present who not only voted affirmatively but lauded the new departure as epochal in the annals of Medical History in Louisiana.

As Chairman of the Committee on Arrangements I shall be pleased to present in person the enclosed Resolutions to the Executive Committee of the Louisiana State Medical Society and receive their acceptance.

I am,

Fraternally yours

(Chairman)

The resolution which was published on page 783 in the June, 1922, number of the *Journal* is reproduced in part:

Whereas, the Executive Committee of the Local Committee on Arrangements knows that according to precedence the disposal of such surplus rests entirely with the Committee; and

Whereas, it is the desire of this Committee that this fund should be applied to the greatest benefit of organized medicine in the State of Louisiana, and the question of securing a *Journal* for the State Medical Society has been a vital issue for the past few years;

Resolved, That the Committee hereby decided to purchase the New Orleans Medical and Surgical *Journal* and present it to the Louisiana State Medical Society, to be used as its official organ, with the following conditions:

First. The *Journal* to be purchased for a consideration of five thousand dollars, of which three thousand dollars cash shall be paid of the above surplus, and the balance of the two thousand dollars to be paid by the Louisiana State Medical Society.

Second. The Domicile of said *Journal* to remain in the City of New Orleans.

Third. All books received and all journals received in exchange or otherwise, to be donated to the Orleans Parish Medical Society.

And be it further resolved, That a copy of these resolutions be sent to the American Medical Association, the Louisiana State Medical Society, the Orleans Parish Medical Society, and also to the official *Journal* for publication.

The Chairman of the Committee on Arrangements met with the Executive Committee of the Louisiana State Medical Society, and after an hour of hectic argumentation, the deal was consummated. These stipulations were unequivocally accepted by the Executive Committee of the Louisiana State Medical Society in its name. The Orleans Parish Medical Society has every right in perpetuity, legally and morally, to all the books and to all the journals received by said *Journal*.

In confirmation to the above resolutions the acquisition of the *Journal* was announced to the Members of the State Medical Society in an editorial in the issue of July 1922, which said in part:

"The *Journal* becomes the property of the Louisiana State Medical Society, through the action of the Committee on Arrangements of the A.M.A., as detailed in their report published in the June issue."

The New Orleans Medical *Journal* is the oldest publication in New Orleans. As a medical periodical, in this country, it is only antedated by the American *Journal of Medical Sciences*. Dr. J. H. Musser enjoys the unique distinction of being the Editor of the former, and having served in the same capacity for the latter.

The survival of the *Journal* must be credited to the culture, erudition, courage and militancy of its Editors. At all times they have manifested a fanatical devotion to the welfare of the profession by their unflagging vigilance in maintaining in its behalf a high plane of ethics, and a constant elevation of its educational standards.

Today the *Journal* in celebrating its centenary; yet, it has all the attributes of youth, - - - LONG MAY IT LIVE!

BIBLIOGRAPHY

New Orleans M. & S. J., Vol. 1 to 12.

Fossier, A. E.: History of medical education in New Orleans. From its birth to the Civil War, *Ann. Med. Hist.*, 6:320; 6:427, year.

Fossier, A. E.: Charles Aloysius Luzenberg, 1805-1848: A history of medicine in New Orleans during the years 1830 to 1848, *La. Historical Quart.*, 26:1, 1943.

MEDICAL LITERATURE
IN LOUISIANA
PRIOR TO THE ADVENT
OF THE
NEW ORLEANS
MEDICAL AND SURGICAL JOURNAL

WILLIAM DOSITE POSTELL†
NEW ORLEANS

Probably in order to appreciate what the New Orleans Medical and Surgical Journal has meant to medicine in this section for the last hundred years it will only be necessary to point out just how scanty Louisiana was represented in the medical literature prior to the publication of this journal. Dr. Erasmus Darwin Fenner in making his appeal for support of a local medical periodical literature when he assumed co-editorship of the New Orleans Medical News and Hospital Gazette in 1857, made this statement as to what the New Orleans Medical and Surgical Journal had meant to medicine in the South:¹ "It is now nearly fourteen years since the first viable Medical Journal originated in the City of New Orleans . . . To show what an impetus was then given to medical progress in the South, it is only necessary to state, that since that period, thirteen medical journals, five Medical Colleges, and numerous Medical Societies have sprung up in the Southern States." . . .

Prior to 1844 when the New Orleans Medical and Surgical Journal began publication Louisiana is represented in the medical literature by approximately 17 pamphlets and reports, 31 journal articles and one short lived medical journal. Practically the entire subject matter of these early contributions had to do with the cause, treatment and prevention of yellow fever. Periodically after each epidemic, the physicians becoming conscience stricken, would make an effort to organize and investigate the cause of the latest epidemic. A report would frequently be issued and a few papers would appear, and then perhaps since habit was so strong, the same indifferent policy

would assert itself and there would be a lapse in the appearance of any more publications for some time. Maybe since the pressure of caring for the sick was so great, the physician had little time to devote towards promoting a periodical literature. Whatever the reason very few physicians exerted themselves in writing, so that only about 37 physicians are represented in the literature as having recorded their experiences. Of this group only seven made more than one contribution. The most prolific of these was Dr. Edward Hal Barton, who is represented eight times. Drs. J. Baxter, M. Donnellan, N. V. A. Gérardin, Michel Halphen, J. W. Heustis, L. F. Thomas and P. F. Thomas, each made two contributions.

Writing in 1846, Dr. Bennett Dowler had this to say in regard to the unproductiveness of the medical men of this early period:² "This golden age was poor in literature. Physicians grew gray in the most extensive practice, and left the theatre of their fame, for the 'undiscovered country,' without bequesting any scientific information for the benefit of posterity. Perhaps they believed as posterity had done nothing for them, they owed to it nothing." . . .

Of this early group of medical authors we know little. The best known is Dr. Barton, who came to Louisiana in 1820 after graduating from the Medical Department of the University of Pennsylvania, and settled in St. Francisville. Dr. Barton's publications showed a scientific approach to medical problems far in advance of his time. He repeatedly emphasized that therapeutic measures must be based on observations drawn from their use, instead of theory. He strongly attacked the practices of that day, such as excessive bleeding, the administering of violent doses of emetics and cathartics, and the promiscuous use of calomel. He early became interested in the relationship between climatic conditions and the health of the population, and made the shrewd observation that following an average temperature of 80°F. during the summer for a two months' period, an epidemic of yellow fever was sure to follow. He was instrumental in organizing the Medical

†From the Library of the School of Medicine, Louisiana State University.

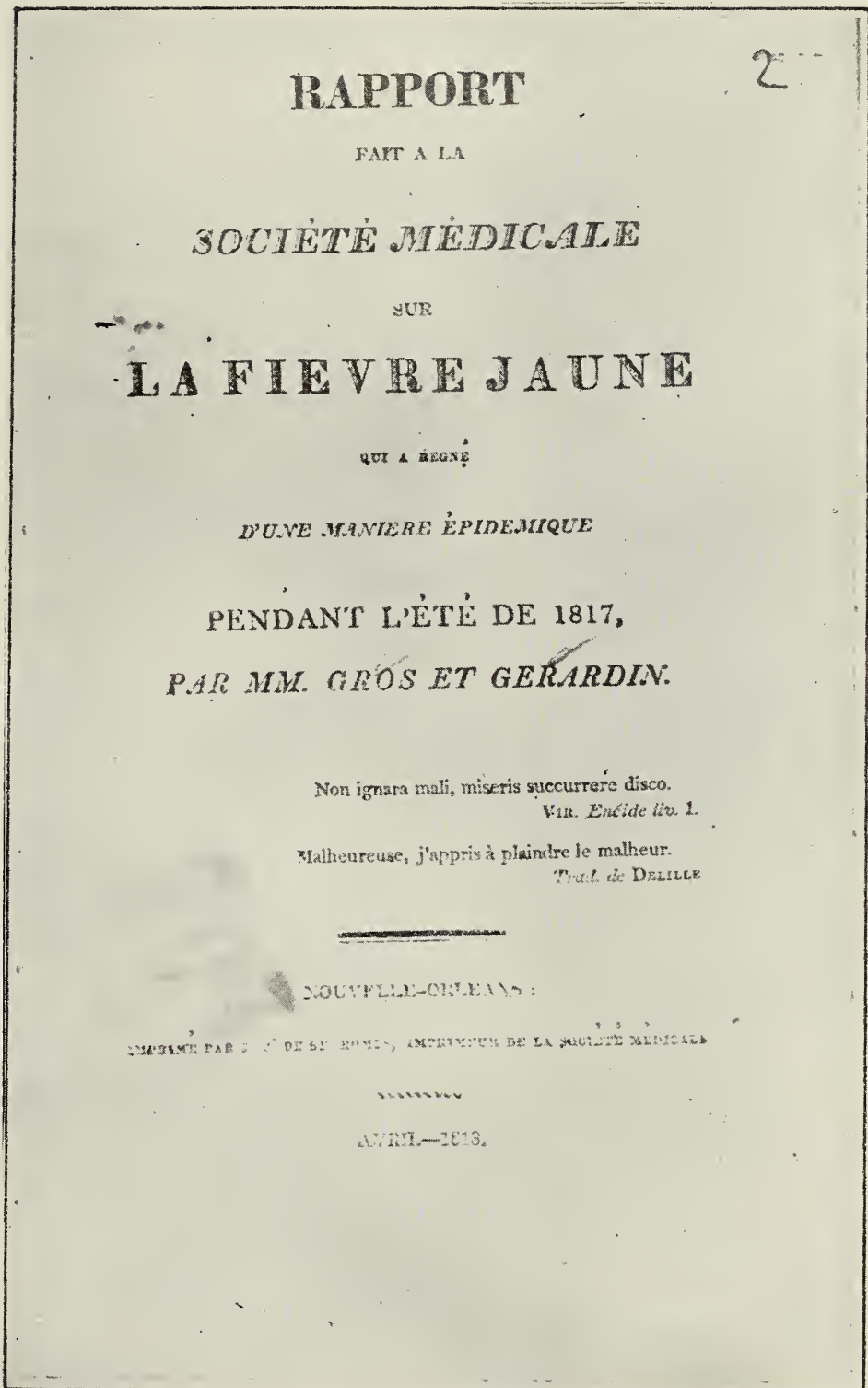


Fig. 1. First report of the Société médicale de la Nouvelle Orleans. Oldest extant medical item published in Louisiana

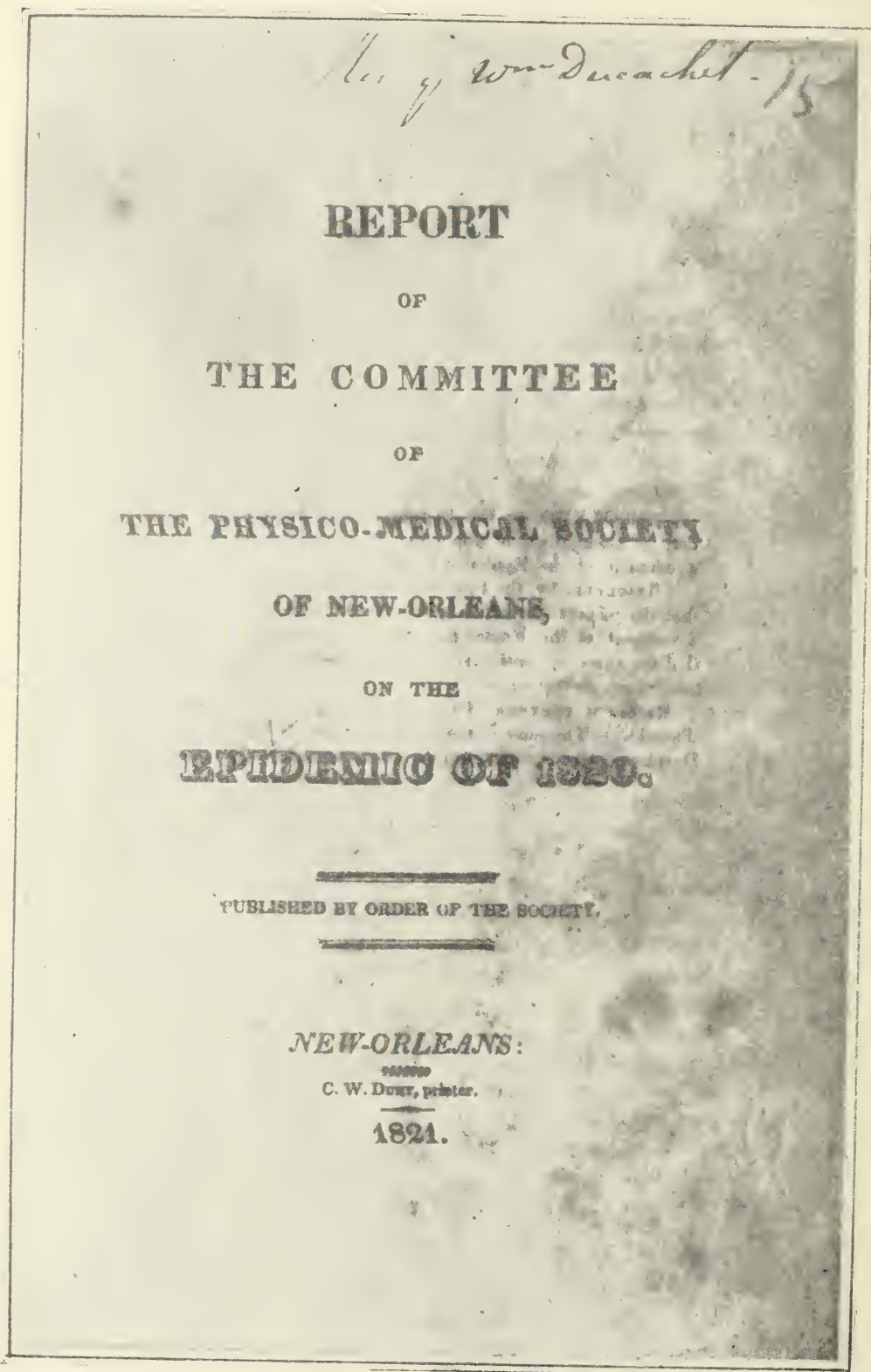


Fig. 2. Report of the Physico-Medical Society of New Orleans. The second medical society organized in Louisiana.

College of Louisiana, and at one time served as Dean. His last contribution was the report of the Sanitary Commission of which he was Chairman, and undoubtedly it was the disappointment over its poor reception by the physicians and the people of New Orleans who failed to appreciate its worth that caused his death.

Of the other medical authors we know little. Dr. Baxter seems to have been a resident of New York City, and only visited New Orleans to observe an epidemic of yellow fever. Dr. Donnellan, a native of Ireland, was licensed to practice medicine in the State in 1834, and while a resident gave us two case reports, one reported from Donaldsonville, and the other from Point Coupée. Dr. Gérardin, who with Dr. Gros, made the first report for the *Société médicale*, seems to have had only a brief career in Louisiana. He was granted his license to practice in Louisiana in 1817, and at one time was listed as a member of the *Société médicale* and also the *Physico-Medical Society*. Dr. Halphen, licensed in 1816, gave us two reports on the cholera epidemics of 1833 and 1835. His publications were made in the form of a report to the Royal Academy of Medicine of Paris. Dr. Heustis was a surgeon in the Army of General James Wilkinson, which was assembled in the City for its defense. His description of the epidemic which almost decimated the troops is the best authentic account published. Of Dr. L. F. Thomas nothing is known except that he gave us what is probably the best accounts of the epidemics which occurred in New Orleans in 1837 and 1841. Dr. P. F. Thomas, licensed in 1823, published one of the early monographs and served for a time as Secretary-General of the *Société médicale*. Since the other authors only contributed one paper and their literary career was of such brief duration, no mention will be made of them.

The publications of this early period fall into the following groups: the pamphlets, the reports, the journal articles and the one medical journal. In the development of early medicine in our country, the pamphlet played a particularly important role.

Since journals were so few it was only through a pamphlet issued as a rule at the author's own expense, that a physician could make known his own observations or experiences. The pamphlets issued at this time totaled 12. The subject matter of the majority dealt with the various epidemics of yellow fever which periodically visited the city. Cholera was treated in two; the medical topography of lower Louisiana in one; an epidemic of diarrhea and dysentery in one; temperance in its relationship to health by one; the relationship between climate and health in two, and the principles of medical practices in one. There were some rather keen observations made in these early pamphlets. Dr. Heustis¹⁰ made one of the first observations on the non-contagious character of yellow fever, but the greatest contribution was probably made by

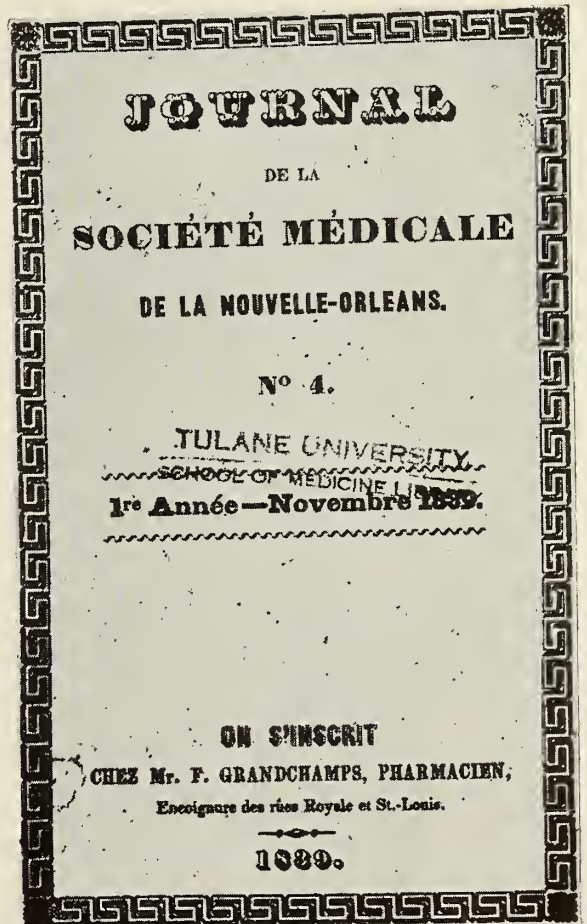


Fig. 3. Journal de la Société médicale de la Nouvelle-Orléans. First medical journal published in Louisiana.

Dr. Barton,² whose plea for the practice of scientific medicine singled him out as a pioneer in re-introducing the principles of Hippocrates as the basis of medical practice. His use of vital statistics also showed him to be years ahead of his time.²¹

There were five reports issued by the local medical societies of that time. The first two of these were issued by the Société médicale de la Nouvelle-Orléans on the epidemic of 1817, and were written by Drs. A. A. Gros, N. V. A. Gérardin, and J. G. Taillefer.^{13,14} After the epidemic of 1817 it became apparent to the physicians of New Orleans that some organized effort on their part was necessary if they wished to check in some measure the ravages of yellow fever. Accordingly, in 1818 the physicians of the city organized and a committee was appointed to investigate the cause of the epidemic the previous year. These two reports attributed the cause of the epidemic to the peculiar topography of New Orleans, abundant rains, excessive heat of the summer and the influx of strangers. The third report published in the state was also issued by the same society and was an attempt to cover the epidemic of 1819.¹⁵ There seems to have been nothing new added in this report as to the cause, treatment or prevention of yellow fever.

By 1820 a large number of English speaking physicians had settled in New Orleans and these physicians finding themselves out of place in a French speaking society organized their own society which was known as the Physico-Medical Society of New Orleans. One of the first acts of this society was to appoint a committee to make a report on the yellow fever epidemic of 1820.¹⁶ This report was very interesting and was probably the most scientific and the most honest of all the early reports. It began by describing the unsanitary conditions that prevailed, and went on to conclude that the committee was forced to admit that science had not yet found the means or remedy for combating and treating yellow fever.

Apparently the last report issued during this era was the one issued by the Physico-Medical Society of New Orleans in relation

to the trial and expulsion of Dr. Charles A. Luzenberg from the society.^{3,17} Dr. Luzenberg, a brilliant scholar and an excellent physician, was in considerable difficulty at times over his inability to restrain his temper. This made him many enemies among his medical colleagues.

Although something like 31 articles appeared in journals only a few deserve mentioning. One of the characteristics of our early physicians was their pride in their city, and the one issue they would unite on was any criticism from a non-resident physician. Therefore, one of the first group of papers published was to defend their city from the criticisms of its unsanitary condition by Dr. Baxter, a resident of New York. One of the first papers dealing with diseases peculiar to the Southern negroes was written by Dr. Tidyman and was based on his observations in the Charity Hospital of New Orleans. Dr. Barton issued a paper on the use of vital statistics, and a Dr. Peck described the medical botany of Sicily Island, Louisiana. The other articles are probably of no very great consequences. The first articles were mostly published in the Medical Repository of New York. This was the first medical journal published in the United States. Later, Louisiana medicine was represented in the Philadelphia Journal of the Medical and Physical Sciences, American Medical Intelligence, Western Journal of the Medical and Physical Sciences, American Medical Recorder, American Journal of the Medical Sciences, the Transylvania Journal of Medicine, the New York Medical and Physical Journal and the Boston Medical and Surgical Journal. All of these journals were published in the East. Also many of the articles appeared in journals published in Paris, France.

An early attempt was made in 1839 by the members of the Société médicale de la Nouvelle-Orléans to publish a medical journal. A committee was appointed, composed of Drs. E. Fortin, J. Martin, and a Dr. Sabin and a Dr. Daret to investigate the possibility of publishing a journal and to serve as a publication committee. The so-

ciety succeeded in publishing a short-lived journal entitled, "Journal de la Société médicale de la Nouvelle-Orléans." This was the first journal published in the State. Unfortunately, the journal lasted less than a year, being discontinued either because of lack of interest or lack of funds. Copies are exceedingly rare, and no library, as far as can be ascertained, has the complete file.

This, then, is Louisiana's contribution to medical literature during these formative years. If in most cases the papers failed to make any scientific contribution to medicine they at least showed the independent spirit and ingenuity which the pioneer physician displayed in attempting to meet the problems with which he was constantly confronted.

REFERENCES

1. Editorial and Miscellaneous to the Medical Profession, New Orleans M. News and Hos. Gaz., 4:485, 1857.
2. Dowler, Bennett: Researches, historical, topographical, and critical, on yellow fever. New Orleans M. & S. J., 3:165, 1846.
3. Fossier, A. E.: Charles Aloysius Luzenberg, 1805-1848; a history of medicine in New Orleans during the years 1830 to 1848, Louisiana Historical Quarterly, 26:1, 1943.

BIBLIOGRAPHY OF LOUISIANA MEDICAL LITERATURE, 1796-1844

Pamphlets

1. Barton, E. H.: Account of the epidemic yellow fever which prevailed in New Orleans during the autumn of 1833, Philadelphia, Skerrett, 1834. 52 p.
2. *Ibid*: The application of physiological medicine to the diseases of Louisiana, Philadelphia, Skerrett, 1832. 55 p.
3. *Ibid*: A discourse on temperance, and of the applicability of stimulants in a warm climate, New Orleans, Rea, 1837. 32 p.
4. *Ibid*: Introductory lecture on acclimation, delivered at the opening of the third session of the Medical College of Louisiana. New Orleans, Commercial, 1837. 17 p.
5. *Ibid*: Introductory lecture on the climate and salubrity of New Orleans; and its suitability for a medical school, New Orleans, Johns, 1835. 24 p.
6. Chabert, J. L.: Réflexions médicales sur la maladie spasmodico-Lipyrrienne des pays chauds, vulgairement appelée fièvre, jaune. Nouvelle Orleans, de l'imprimerie de l'Ami des lois, 1821. 317 p.
7. Gérardin, N. V. A.: Mémoires sur la fièvre jaune, considérée dans sa nature et dans ses rapports avec les gouvernements. Paris, Jeunehomme-Cremière, 1820.
8. Halphen, Michel: Mémoire sur le choléra-morbus, compliqué d'une épidémie de fièvre jaune, qui a régné simultanément à la Nouvelle-Orléans, Paris, Baillière, 1833. 192 p.
9. Halphen, Michel: Observations sur le choléra-morbus qui a régné à la Nouvelle-Orléans en 1833 et en 1834, Paris, Baillière, 1835. 182 p.
10. Heustis, J. W.: Physical observations and medical tracts and researches on the topography and diseases of Louisiana, New York, Swords, 1817. 165 p.
11. Riviere, J. A.: Topographie médicale de bas Louisiana, 1831.

12. Thomas, P. F.: Essai sur la fièvre jaune l'Amérique, Nouvelle-Orléans; et à Paris, Baillière, 1823. 138 p.

Reports

13. Gros, A. A. and Gérardin, N. V. A.: Rapport fait à la Société médicale sur la fièvre qui a régné d'une manière épidémique pendant l'été de 1817, Nouvelle-Orléans, 1818. 62 p.
14. Société médicale de la Nouvelle-Orléans: Précis analytique des travaux de la . . . depuis le mois d'août 1817, jusqu'au premier janvier 1818. Lu à la séance du 4 (Avril) de cette année, par J. G. Taillefer, Nouvelle-Orléans, St. Rome, 1818. 22 p.
15. Société médicale de la Nouvelle-Orléans: Rapport publié au nom de la Société médicale de la Nouvelle-Orléans, sur la fièvre jaune, qui y a régné épidémiquement, durant l'été et l'automne de 1819. Nouvelle-Orléans, McKraher, 1820. 60 p.
16. Physico-Medical Society of New Orleans: Report of the committee of the Physico-Medical Society of New Orleans, on the epidemic of 1820, New Orleans, Duhy, 1821. 16 p.
17. Physico-Medical Society of New Orleans: Proceedings of the Physico-Medical Society of New Orleans, in relation to the trial and expulsion of Charles A. Luzenberg (with comments on the same). New Orleans, 1938. 16 p.

Journal Articles

18. Anderbach, G.: Some observations on the remittent fever of marshy grounds, as observed at Forts Jackson and St. Philippe, during the summer and fall of 1827, New York M. & Phys. J., 2ns:74, 1830.
19. Barton, E. H.: Account of the epidemic yellow fever which prevailed at New Orleans during the autumn of 1833, Am. J. M. Sc., 15:30, 1834.
20. *Ibid*: Cases illustrative of the application of physiological medicine to the diseases of Louisiana, Am. J. M. Sc. 11:43, 1832.
21. *Ibid*: Medical Statistics of New Orleans, Am. M. Intellig., 1:82, 1837.
22. Baxter, J.: Reply to the replication of the Medical Society of Louisiana. Med. Reposit., 7ns:223, 1822.
23. *Ibid*: Statement of the yellow fever: as it occurred in New Orleans, 1819, Med. Reposit., 6ns:1, 1821.
24. Caldwell, Charles: Thoughts on the probable destiny of New Orleans, in relation to health, population, and commerce, Phil. J. M. & Phys. Sc., 6:1, 1823.
25. Clarke, R. J.: Account of a singular spasmodic affection of the respiratory organs. Am. J. M. Sc., 3:482, 1829.
26. Cronkrite, W. L.: An inquiry into the pathology and treatment of yellow fever, as it prevailed at New Orleans at this time, August, 1820, West. J. M. & Phys. Sc., 3:367, 1830.
27. DeChambéry, Dupuy: A historical sketch of the epidemic yellow fever, which prevailed in the city of New Orleans in the summer and autumn of 1819, Med. Reposit., 6ns:15, 1821.
28. DeChampmanois, Raoul: Lettre sur le méthode de traitement employé dans fièvre jaune depuis 1804 jusqu'en 1821, N. Jour. de méd. chir. pharm. 13:185, 1822.
29. Donnellan, M.: Case of carcinoma of the tongue, successfully treated with the ligature, Am. J. M. Sc., 17: 540, 1836.
30. *Ibid*: Case of triplets, Pointe Coupée, Louisiana, Am. J. M. Sc., 25:58, 1839.
31. Dumaresq, P. J.: An account of dengue, danga, or dandy fever, as it occurred in New Orleans, and in the person of the writer. . . , Boston M. & S. J., 1:497, 1828.
32. Dupuy, George: Précis historique de l'épidémie de fièvre jaune qui a régné en 1819 à la Nouvelle-Orléans, J. gén. de méd., chir. et pharm., 74:203, 1821.
33. Gros, A. A. and Gérardin, N. V. A.: Rapport fait à la Société médicale, sur la fièvre jaune qui a régné pendant l'été de 1817, Am. M. Recorder, 2:217, 1819.
34. Hale, Josiah: Observations on the fever which pre-

(Continued on Page 549)

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL
1844 - 1944

PORTRAIT GALLERY OF THE EDITORS*

★ ★ ★

THE MEN WHO HAVE GUIDED THE DESTINIES OF THE JOURNAL
DURING THE FIRST CENTURY OF ITS EXISTENCE

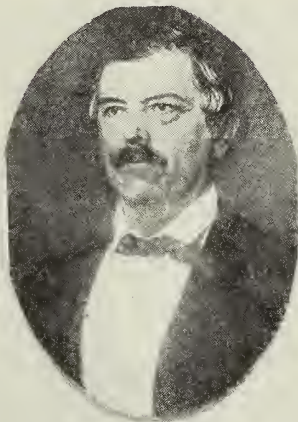
★ ★ ★

*IT IS DEEPLY REGRETTEED THAT PORTRAITS OF ALL THE EDITORS
OF THE JOURNAL WERE NOT AVAILABLE, ESPECIALLY ONE OF THE
FOUNDERS, ABNER HESTER, (1813-1853), EDITOR 1844-1853.

PORTRAITS OF THE EDITORS



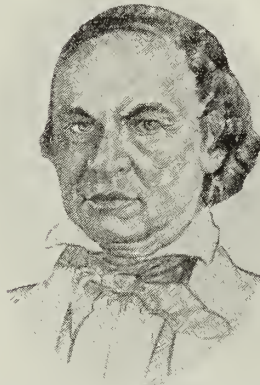
W. M. Carpenter (1811-1848)
Editor 1845-1848



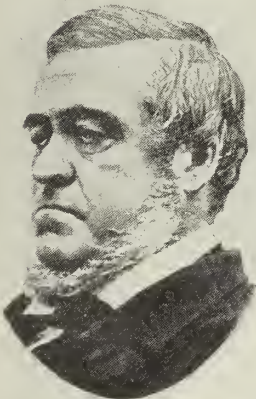
E. D. Fenner (1807-1866)
Editor 1844-1848



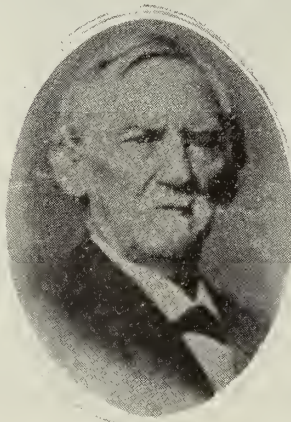
John Harrison (1808-1849)
Editor 1845-1849



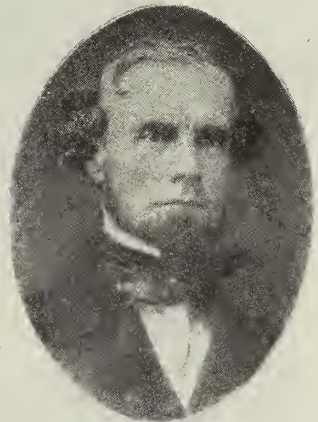
Bennett Dowler (1797-1878)
Editor 1853-1861



Warren Stone (1808-1872)
Editor 1857-'59, 1867-'68

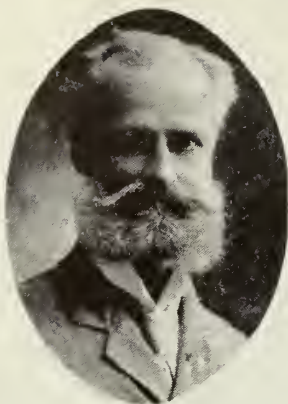


S. E. Chaille (1830-1911)
Editor 1857-1868

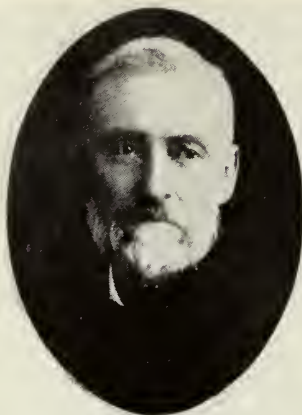


James Jones (1806-1873)
Editor 1857-'59, 1867-'68

PORTRAITS OF THE EDITORS



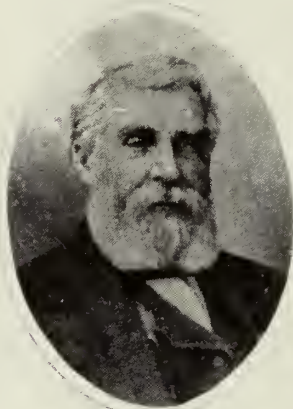
T. H. Watkins (1846-1902)
Co-Editor 1881-1884



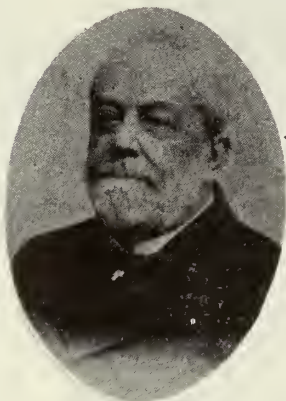
S. S. Herrick (1833-1906)
Editor 1866-1882



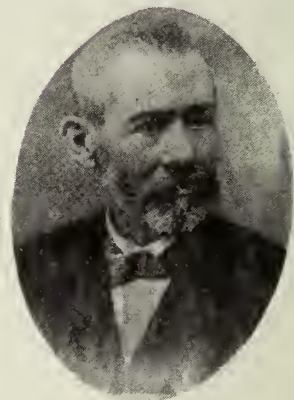
L. F. Salomon (1850-1919)
Co-Editor 1882-1884



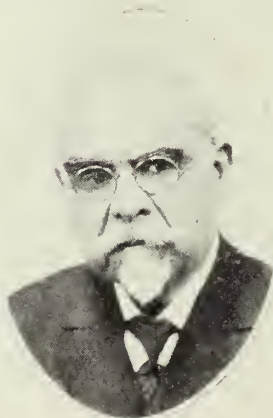
S. M. Bemiss (1821-1884)
Editor 1868-1882



D. C. Holliday (1824-1889)
Co-Editor 1882-1884



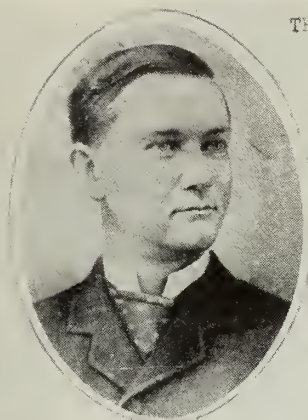
F. Loeber (1839-1901)
Co-Editor 1882-1884



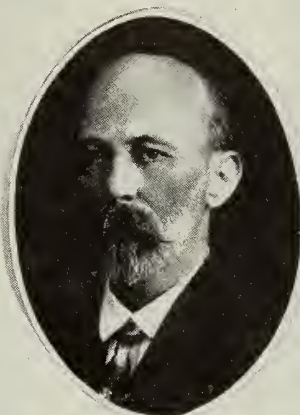
R. Matas (1860-)
Editor Apr., 1883-Apr., 1885
Co-Editor 1885-1889

PORTRAITS OF THE EDITORS

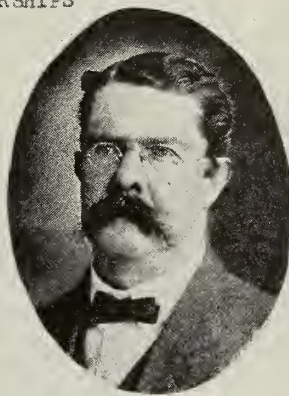
THE JOURNAL UNDER GROUP EDITORSHIPS



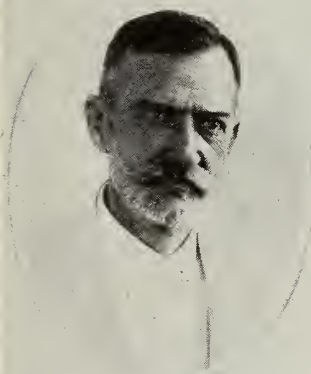
A. B. Miles (1852-1894)
Editor 1884-1890



A. McShane (1861-1923)
Editor 1884-1896



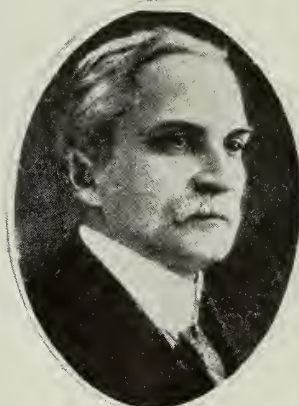
G. B. Lawrason (1854-1918)
Editor 1884-1890



H. D. Bruns (1859-1933)
Editor 1884-1890



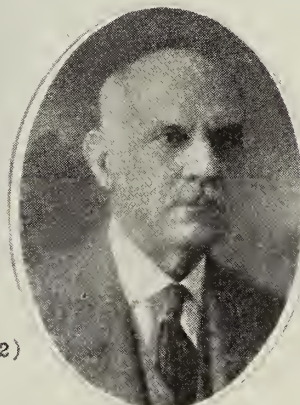
I. Dyer (1865-1920)
Editor 1896-1920



F. Parham (1856-1927)
Editor 1884-1890



P. E. Archibard (1859-1912)
Editor 1884-1890



Chas. Chassaignac (1862-1936)
Editor 1896-1923



J. H. Bemiss (1856-1897)
Editor 1884-1890

PORTRAITS OF THE EDITORS



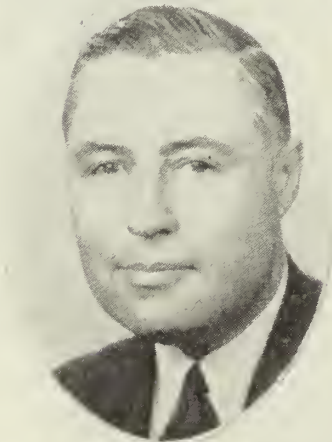
M. J. Gelpi (1883-1939)
Editor 1922-1923



H. W. E. Walther (1888-
Editor 1923-1927



J. H. Musser (1883-)
Editor-in-Chief
Since July, 1927



V. R. Wirth (1901-)
Assistant Editor 1927-1928
Associate Editor 1928-1930
Editor since June, 1930



P. T. Talbot (1882-
General Manager
Since 1922

BIOGRAPHIC ANNOTATIONS APPENDED TO THE PICTORIAL GALLERY OF THE EDITORS AND BUILDERS OF THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL SINCE ITS BIRTH IN MAY, 1844, TO THE CLOSE OF THE FIRST CENTENARY OF ITS SERVICE TO THE MEDICAL PROFESSION, UNDER THE AUSPICES AND OWNERSHIP OF THE LOUISIANA STATE MEDICAL SOCIETY ON MAY 4, 1944.

RUDOLPH MATAS, M. D.†
NEW ORLEANS

Erasmus Darwin Fenner, born in Franklin County, Tenn., in 1807, M. D. Transylvania University 1830, died in New Orleans May 4, 1866. In 1844, with Dr. Hester he founded the *New Orleans Medical Journal*, which a year later became the *New Orleans Medical and Surgical Journal*, and continued as co-editor until 1848. He is also well known as editor of the *Southern Medical Reports* (two volumes, 1849-1850), was one of the founders and first dean of the New Orleans School of Medicine in 1856, was an authority on yellow fever and great advocate of clinical or bedside instruction over didactic lectures.

Abner Hester, a native of Mecklenburg County, Virginia, was born in 1813; M. D. 1837, University of Pennsylvania; died of epidemic cholera in New Orleans, December 1, 1853. From the founding of the Journal with Dr. Fenner in 1844, he served as co-editor for five years, and sole editor and owner from 1849 until his death. He was port physician and vice-president of the Louisiana State Medical Society at the time of his death, and had previously served on the Board of Medical Examiners for East Louisiana.

William M. Carpenter, the only native Louisianian among the ante-bellum editors of the Journal, was born near St. Francisville in 1811; M. D. University of Louisiana (now Tulane) 1836; died of tuberculosis in

1848. He became professor of Materia Medica in the University of Louisiana in 1842, and dean 1845-46. His plans to establish a second medical journal with Dr. Harrison in 1845 were abandoned when they joined the editorial staff of the *New Orleans Medical and Surgical Journal* as co-editors and co-owners. Dr. Carpenter resigned a few months before his death.

John Hoffman Harrison, born in Washington, D. C., in 1808; M. D. University of Maryland 1831; died in New Orleans, March 19, 1849. Professor of Physiology and Pathology, University of Louisiana (now Tulane) and twice dean, 1840-41 and 1842-44, he became co-editor and co-owner of the Journal in 1845, when he and Dr. Carpenter merged their proposed medical periodical with the Journal. His death in 1849 left Dr. Hester sole editor.

Bennet Dowler, born in Virginia in 1797; M. D. University of Maryland 1827; died in New Orleans, November 12, 1878. He took over the editorship of the Journal soon after Hester's sudden death in 1853, contributing almost the entire volume for several years, and continuing his editorship until the Civil War in 1861, four years after Drs. Stone, Jones and Chaillé purchased the Journal. Noted for his researches, especially in physiology, he was one of the organizers of the New Orleans Academy of Sciences in 1853.

Warren Stone, born in Vermont in 1808; M. D. Pittsfield, Massachusetts, 1831; died in New Orleans December 6, 1872. He was co-editor and co-owner of the Journal from 1857-1859, and co-editor 1867-68, contributing more by the prestige of his name than in actual editorial capacity. The first in Louisiana to operate under general anesthesia (ether), he was the leading surgeon of his day, Professor of Surgery for 35 years, and a member of the faculty of the University of Louisiana (now Tulane) from its first session until shortly before his death.

James Jones, born in Georgetown, D. C., in 1807; M. D. University of Pennsylvania, 1828; died in 1873. A member of the fac-

†Chairman of the Louisiana State Medical Society Committee on Medical History.

ulty of the University of Louisiana for 37 years, and twice dean, 1841-42, 1848-49, he served as co-editor and co-owner of the *Journal* 1857-59, and co-editor 1867-68.

Stanford Emerson Chaillé, a native of Natchez, Miss., of Huguenot stock, was born in 1830; M. A. Harvard; M. D. University of Louisiana (now Tulane) 1853; died in New Orleans, May 27, 1911. For fifty years he was a member of the Tulane faculty, Professor of Physiology, Hygiene and Pathological Anatomy 1868-1908, and dean from 1885 to his retirement in 1908. He served as Chairman of the Havana Yellow Fever Commission, United States National Board of Health (1879-80) with Drs. Sternberg, Guiteras and Hardee. He was co-owner and co-editor of the *Journal* from 1857-1868.

William Charles Nichols was probably born in Alabama in about 1833; the date and place of his death are not known. He received his M. D. from the University of Maryland in 1856; was House Surgeon of Charity Hospital, New Orleans 1860-61; was Demonstrator of Anatomy, University of Louisiana (now Tulane) from March 20, 1858 to April 1, 1869, when he resigned; co-owner and co-editor of the *Journal* with Dr. Chaillé, 1859-67.

Stephen Solon Herrick, born in Vermont in 1833; M. D. University of Louisiana (now Tulane) 1861, after several years of teaching; died in California, May 20, 1906. In 1869 he won the American Medical Association prize essay award with his treatise on Quinine. Professor of Chemistry in the New Orleans School of Medicine, 1869-70, he served on the editorial staff of the *Journal* from 1866-1882.

Samuel Merrifield Bemiss, born in Nelson County, Kentucky, in 1821; M. D. University of New York 1846; Professor of Theory and Practice of Medicine, University of Louisiana (now Tulane) from June 15, 1866, until his death in New Orleans, November 18, 1884. He was a member of the National Board of Health from its foundation until his death. His name appears on the editorial staff of the *Journal* as early

as the first issue following the Civil War, July, 1866, but his actual editorial activity dates from 1867 to 1882.

William Hamilton Watkins, born in New Orleans in 1846; M. D. University of Louisiana (now Tulane) 1868; died in Milwaukee, Wis., May 8, 1902. Specially active as a sanitarian and director of the New Orleans Sanitary Association in the eighties and nineties, he was co-editor of the *Journal* 1881-1884.

John Godfrey was born in Sumter County, Alabama, in 1838; M. D. 1875 National Medical College (now George Washington University) Washington, D. C.; died October 16, 1907, after serving in the United States Marine Hospital Service (now United States Public Health Service) from 1877 until a year before his death. While stationed at the Marine Hospital in New Orleans (1882-1885) he took an active part in the professional activities of the city, and served as editor of the *Journal* 1882-1883.

Lucien F. Salomon, born in New Orleans in 1850; M. D. University of Louisiana (now Tulane) 1872; died in New Orleans, December 31, 1919. A specialist in dermatology and internal medicine, he was co-editor and business manager of the *Journal* 1884-1890, associated with Dr. R. Matas in the same editorial office.

Daniel Chemiere Holliday, born in New Orleans, October 18, 1901. Following his M. D., in the New Orleans School of Medicine, 1866, he studied in Europe, returning to New Orleans in 1868; was medical director and Surgeon-in-chief of Touro Infirmary 1868 until his death. He was co-editor of the *Journal* from 1882-1884.

Frederick Loeber was born in Giessen, South Germany, in 1839, and died in New Orleans, October 18, 1901. Following M. D., New Orleans School of Medicine, 1866, he studied in Europe, returning to New Orleans in 1868; was medical director and Surgeon-in-chief of Touro Infirmary 1868 until his death. He was co-editor of the *Journal* from 1882-1884.

Rudolph Matas, born at Bonnet Carre, La., in 1860; M. D. University of Louisiana (now Tulane) 1880; member of the Tulane faculty for 43 years, from 1884 until his retirement in 1927; Professor of Surgery 1894-1927, emeritus since. Contributor to the Journal since 1881; editor 1883-85, co-editor and co-owner 1884-1890, and collaborator from 1881 to date (1944). Only surviving editor of the Journal previous to State Society ownership.

Albert Baldwin Miles, born in Prattsville, Ark., in 1852; M. D. University of Louisiana (now Tulane), 1875; died in New Orleans, August 5, 1894. While Resident House Surgeon of the New Orleans Charity Hospital, 1882-1894, established Training School for Nurses; first to operate systematically for penetrating gunshot wounds of the abdomen. President of the Louisiana State Medical Society, 1893-94, member of the Tulane faculty from graduation until his death, he was co-editor and co-owner of the Journal 1884-1890.

Henry Dickson Bruns, born in Charleston, S. C., in 1859; M. D. Jefferson Medical College, Philadelphia, 1881; died in New Orleans May 19, 1933. Specialist in diseases of the eye and ear from 1883, he was one of the founders of the Polyclinic, for many years Surgeon-in-chief of the Eye, Ear, Nose and Throat Hospital in New Orleans, president of the Louisiana State Medical Society 1906-07, publicly active in reform politics, co-editor and co-owner of the Journal, 1884-1890.

Frederick William Parham, native of New Orleans, was born in 1856; M. D. University of Louisiana (now Tulane) 1879; died in New Orleans March 6, 1927. He was a skilled surgeon, one of the founders and Professor of Surgery of the New Orleans Polyclinic and its successor, the Tulane Graduate Medical School, a pioneer in asepsis by heat, president of the Orleans Parish Medical Society, 1895, of the Louisiana State Medical Society, 1900-01, of the Southern Surgical Association in 1908, co-editor and co-owner of the Journal, 1884-1890.

Paul Emile Archinard, born in New Orleans in 1859; M. D. University of Louisiana (now Tulane) 1882; died in New Orleans, August 23, 1912. A bacteriologist, neurologist and pathologist, he was a faculty member of the New Orleans Polyclinic and Tulane for many years, president of the Louisiana State Medical Society, 1896-98, co-editor and co-owner of the Journal, 1884-1890.

John Harrison Bemiss, son of Dr. S. M. Bemiss, was born in Louisville, Ky., in 1856; University of Louisiana (now Tulane), 1878; died in Ocean Springs, Miss., September 2, 1897, after a long illness. Clinical teacher of physical diagnosis (Tulane faculty), and the New Orleans Polyclinic, he was co-editor and co-owner of the Journal, 1884-1890.

George B. Lawrason, born in Pass Christian, Miss., 1854; M. D. Tulane, 1883; died in New Orleans, February 3, 1918. One of the founders of the New Orleans Polyclinic and for many years on its faculty, he left New Orleans to serve in the Spanish-American War, settling in Shreveport on his return. He was co-editor and co-owner of the Journal, 1884-1890.

Augustus McShane, born in New Orleans in 1861; M. D. University of Louisiana (now Tulane) 1882; died in New Orleans September 15, 1923. He was Assistant Demonstrator of Anatomy (assisting Dr. Matas) in the Tulane Medical School, 1885-1894; was active on the faculty and in the development of the New Orleans Polyclinic; as an ear, nose and throat specialist, served on the staff of the Eye, Ear, Nose and Throat Hospital (New Orleans) for twelve years, from its establishment by Dr. de Roaldes in 1889. Co-owner and co-editor of the Journal from 1884-1890, he became sole editor and owner from 1891 to 1895.

Note: In addition to other collaborators previously noted, the following: Dr. Arthur W. de Roaldes (1849-1918), founder of the Eye, Ear, Nose and Throat Hospital which bears his name; Dr. John Dell'Orto (1833-1898), a scholarly Italian physician, Cavalier of the Order of the Crown of Italy,

member of the Academy of Science of Turin; Dr. Henry W. Blanc (who died in 1896 at the age of 35 years), first instructor in Dermatology in the Tulane Medical School, founder of the New Orleans Library Association; Dr. W. H. Woods, a conspicuous oculist and instructor in the Medical School of Tulane; all contributed by their faithful and able collaboration to the success of the Journal in association with Dr. Augustus McShane (1891-1896). Drs. R. Matas and F. W. Parham, also collaborators of Dr. McShane during the same period, are mentioned in connection with other more direct editorial titles and functions.

Isadore Dyer, born in Galveston, Texas, in 1861; died in New Orleans, October 12, 1920. Specializing in dermatology following his M. D. at Tulane in 1889, he became an authority on leprosy; served on the Tulane faculty from 1892 until his death, as dean from 1908; also taught in the New Orleans Polyclinic. With Dr. Chassaignac, he owned and edited the Journal from 1896 until his death, a period of 24 years.

Charles Chassaignac, born in New Orleans in 1862; died there March 21, 1936. A faculty member from the time of his graduation at Tulane in 1883 until he retired in 1925, he taught in both undergraduate and graduate departments of the University; was president of the New Orleans Polyclinic and then dean of the Tulane Graduate Medical School, 1897-1925; genito-urinary specialist 1895-1922; president Orleans Parish Medical Society, 1890, 1891, 1922; president Louisiana State Medical Society 1904-05; superintendent Eye, Ear, Nose and Throat Hospital from 1922 until his death; co-owner and managing editor of the Journal with Dr. Dyer from 1896 until 1920; sole editor 1920-1922; chairman Journal Board of Directors, 1923.

Maurice J. Gelpi, born in New Orleans in 1883; M. D. Tulane 1911; died August 9,

1939. A professor of surgery on the faculty of Tulane undergraduate and graduate schools, he was president of the Orleans Parish Medical Society in 1926, and editor of the Journal during its first year under State Society ownership.

Henry Wellman Emile Walther, urologist, was born in New Orleans in 1888; M. D. Tulane, 1910. A member of the faculties of the Loyola Graduate School of Medicine, 1917-19, and the Tulane Graduate Medical School 1920-23. He has been professor of Urology and head of the department in the Louisiana State University Medical School since 1937. He was treasurer of the Orleans Parish Medical Society in 1917-18; served as editor of the Journal, 1923-1927.

John Herr Musser, born in Philadelphia in 1883; B. S., 1905, and M. D. University of Pennsylvania, 1908; professor of Medicine Tulane University, and Chief of the Tulane Medical Division of Charity Hospital, New Orleans; President of the Child Welfare and Public Health Association of New Orleans; acting President and reorganizer of the Louisiana State Board of Health; Chairman Tuberculosis Committee of New Orleans; former editor of the *American Journal of the Medical Sciences*; editor-in-chief of the Journal since 1927.

Willard Ralph Wirth, born in New Orleans in 1901; M. D. Tulane 1924; Assistant Professor of Clinical Medicine on Tulane faculty; cardiologist in laboratory of Touro Infirmary, co-chief Touro Infirmary Indoor Medical Clinic; member of the Journal editorial staff since November, 1927, editor since 1930.

Paul Tilman Talbot, born in Summerfield, La., 1882; M. D. Tulane 1908; secretary-treasurer Louisiana State Medical Society since 1918; managing editor of the Journal since its purchase by the State Society and an invaluable contributor to its success.

THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

BIBLIOGRAPHIC NOTES

MARY LOUISE MARSHALL†
NEW ORLEANS

In celebrating the Centenary of the New Orleans Medical and Surgical Journal, it is of especial interest to learn how it came to be established, the minor variations which have occurred in title wording, and frequency of issue, as well as the editors and associate editors who have fathered it. This is the second oldest medical periodical in the United States published almost continuously under approximately its original title. Its paramount aim has been to represent the teachings and medical practices of physicians of the South. The hundred years' file of the New Orleans Medical and Surgical Journal is in itself a medical history of this area.

It is fitting that we re-publish the Introductory Address of the Editors, which appeared in the first issue (May, 1844),—

"In offering the world a new Periodical, to be devoted to the cultivation of Medicine and the Associate Sciences, we embrace the opportunity, in compliance with customary usage, to offer a few introductory remarks to our readers. The occasion and the undertaking are fraught with peculiar interest; and we trust we shall be excused for candidly avowing (at the very threshold,) our deep sense of the responsibility we have assumed, and a reasonable diffidence in our powers to do justice to the work.

"But for the conviction of the necessity of such a work to the improvement of the Medical Profession in the South; and the frequent expressions to the same purport which have fallen from every Physician with whom we have conversed for the last few years—but for the improbability which seemed to prevail, that it would be undertaken by abler and more proper hands; and for the kindness and encouragement with

which our proposal has been received by the entire Medical Corps of New Orleans, and the Physicians of other places with whom we have had an opportunity to communicate—we should not have ventured to appear before you at this time.

"To collect together the Archives of Medical science from their various sources—to admonish or instruct the members of 'a learned Profession—to arouse from lethargy the genius and talents which it claims—and to furnish a proper medium of communication by which the labours of its various members scattered throughout the world may be interchanged and compared; is an office that should devolve upon wise, discreet and experienced hands.

"But if these are not to be found, willing to embark in the whole enterprise, should it be abandoned or forsaken? Or would less competent abilities be excusable for venturing on the task; if prompted by an ardent desire for the elevation of their Profession, and the firm determination to grapple manfully with all obstacles that may arise, and overcome them if possible?

"Such has been our conclusion, and for our temerity we now throw ourselves upon the indulgence of our Medical Brethren.

"It is universally admitted that a Medical Journal is greatly wanted in this region; we have volunteered our services to supply the *desideratum*, and it remains to be seen whether the Profession will sustain us in our arduous undertaking.

"The field is rich; the harvest is varied and abundant; let us see how many laborers are to be found willing to contribute to the general fund—that fund of useful knowledge and experience which is to be preserved and perpetuated, and will enroll the names of the contributors on the list of Fame; whilst the isolated observations of individual experience will perish with their discoverers, and sink together into the tomb of Oblivion.

"Without your aid our work cannot be expected to succeed. With your generous assistance, we shall enter upon our duties with alacrity, and do not hesitate to believe we shall be able to produce a Practical Journal

†Librarian, Rudolph Matas Medical Library of Tulane University and Assistant Librarian, Orleans Parish Medical Society Library.

unsurpassed in varied interest and usefulness by any in the world, and an honor to the place whence it emanates.

"If we look around us and survey the immense region which we claim as our *own* Literary and Professional Domain—the vast Valley of the Mississippi with its numerous States and varied Institutions, its peculiar climate, soil, productions and diseases—the Southern Atlantic States enclosed between the Alleghanies and the Ocean—the rich West Indies with their tropical climate—the Mexican Gulf Cities, and the interior of Mexico—the flourishing new Republic which has recently shot forth its *Lone Star* into the Political Firmament—and especially our own growing city, containing already upwards of one hundred thousand inhabitants, with its extensive commercial intercourse and large amount of shipping, its four Hospitals and great variety of human species and diseases, its Medical College and Medico-Chirurgical Society; who can deny the extraordinary advantages our position commands for the concentration and cultivation of Medical Science?

"Who can fail to be astonished that such an enterprise has not long since been projected in this admirable field?

"We have been raised in the South-West; our Professional career has been chiefly in the South, and we can assert an experience of fifteen years in its peculiar maladies. We therefore have a right to declare that the diseases of the South can only be studied and learned in the South. The Elements of the profession; Anatomy, Physiology, Pathology, General Therapeutics and Chemistry, may be studied to perfection in the Capitols of Europe and the United States; but what Southern Practitioner will deny, that when he obtained his diploma and came to grapple with the Congestive and Yellow Fevers, Bilious Pneumonia and Chronic Diarrhea of the South, and the Milk-Sickness and other curious affections of the West; he had to commence his observations *de novo*, and to establish for himself a new code of principles and Practice. On this point we feel confident we are expressing an opinion al-

most universally entertained in the South; for often have we heard it deliberately remarked by intelligent Physicians, that a patient attacked by Congestive Fever in the severe form often witnessed on the banks of the Yazoo or Red River, would be much more safe under the management of some Planter or Overseer who had long resided in this region, and who was perfectly familiar with the disease, than he would be in the hands of the ablest Physician of London or Paris, who had never practiced beyond their precincts, and who would be guided in his treatment solely by the general principles of Medicine. So important is it for the practitioner to be intimately acquainted not only with the prominent symptoms of this formidable disease, but with the order in which they occur, and the effects of remedies in the peculiar state in which it places the system.

"Most of the Diseases above mentioned have rarely been seen by the Teachers of the North, and the Medical *Savans* of Europe. Perhaps a few of them when young, prompted by the thirst for knowledge and the desire for gold, have boldly ventured to visit the climes where they prevail—and Yellow Fever does sometimes extend its ravages as far North as New York and Boston; but for the most part these learned Teachers have to glean their knowledge of Southern Diseases from the occasional writings which emanate from Southern Practitioners; and God knows they are like Angels visits, *few and far between*.

"We repeat; it is in *the South* we must study *Southern Diseases* — We earnestly hope that the Journal which we are now projecting, will give a fresh impulse to Medical Study and investigation—that it will be the means of combining the isolated and disjointed labours and observations of the numerous talented Physicians in the Southern States into a form possessing strength, symmetry, and usefulness—and that it may awaken the Southern Physician to a just appreciation of the profession he has chosen. In fine, that it may elevate the Medical profession from the State of a *mere money making trade*; to its proper position,

the noblest pursuit that ever engaged the attention of man!!!

"We call upon our *confrères* throughout the land to arouse themselves from their lethargy, and come forward to the mighty work. The Physicians of our larger cities are highly respected for their talents and acquirements, and justly occupy a lofty position in Society—and we honestly believe there is scarcely a town, village, or neighborhood throughout the many States which lie around us, that does not claim some member of the profession who has talents enough, if he would apply himself in the manner which the young Physician is compelled to practice if he ever hopes for success in a large City; to do honour to his calling, and shed lustre on his name.

"Yet what is the humiliating declaration we are bound to make! Few—but very few Physicians in the South have ever offered contributions to medical literature; and there is not a Medical Journal to be found in the United States, south of Louisville. Will it be believed abroad when we add, that in this vast and interesting region, there exist no less than four Medical Colleges, whose halls are annually attended by students, and which are granting Diplomas from year to year? To these Colleges we would now appeal; and entreat them to come forward and let the world see the extent of their pretensions. Have they too assumed the awful responsibility of becoming teachers in medicine for the sole and degrading object of *making money*? Would they sacrifice the noble attributes of science upon the *altar of Mammon*?

"We would fain hope that the Professors in these schools, as yet young, will prove themselves worthy the high vocation wherewith they are called—that their lectures may be replete with useful instruction, and high and noble sentiments—and that from them, will annually go forth a body of young and ardent devotees to science, well prepared to examine into and unravel the mysteries of nature; and to minister skillfully to the relief of suffering humanity.

"Our central position in regard to the

Medical Colleges in the West and South, will render our Journal an admirable medium for comparing the merits and abilities of their Professors. Whatever they may publish in our work will probably be most generally read in the region whence they obtain nearly all their students. We expect also to furnish a more extensive circulation to their productions, than could be afforded by any Journal published in a smaller or more retired place. We even indulge the hope that in a short time we shall see New Orleans, the Emporium of a vast and varied Commerce as it is, become also a *focus* to which shall be concentrated the rays of Medical light from all parts of the world, again to be disseminated for the most useful purposes. Above all, we would desire to render our Journal conducive to the cultivation and promotion of the best feelings of friendship, and of laudable emulation in the Profession. We are united gentlemen in the pursuit of a noble vocation—our legitimate objects are grand and sublime, and our occupation demands the exercise of the highest faculties of the human mind. It is our duty and interest to keep a vigilant eye to the general character and standing of the Profession. Every member should feel, that to his keeping is entrusted a certain share of the professional reputation; and that like *his honor, and his good name*, he is required to preserve it bright and untarnished. Nor can we be indifferent to the conduct and standing of our *confrères*. We are linked together like the family circle, by an *indissoluble bond*. He who immortalizes himself, sheds a lustre upon his Profession; and likewise he who sinks into disgrace, in some degree brings reproach upon his calling.

"Then let us cease all bickerings, ignoble jealousies and rivalries—let us be ever ready to extend a helping hand to our brother who occupies a lower round on the *enchanting Ladder of Fame*; and congratulate, instead of envying him whose brow is justly crowned with the never-fading laurel. As is often the case, our worst enemies are in our own ranks—at least they are *piratically* sailing and fighting under *our* col-

ours. Let them be unmasked; and let us show a liberal, though *most gullible public*, our superior claims to their confidence and respect. This can only be done by correct deportment, constant study, and a display of superior acquirements. True merit, though often long obscured and depressed, seldom fails ultimately to obtain its just deserts; and if we do not possess it, we have no right to demand consideration and respect.

"Who does not perceive that the Medical Profession has been for some time gradually losing caste and respectability in the South—that unworthy and incompetent members are constantly gaining admission into its ranks—and that Charlatan and Empyric annually find it less difficult to maintain a successful competition with the licensed Practitioner? It behooves us carefully to investigate the cause of this state of things, and to make a firm and united effort to remedy it: otherwise we ourselves, after the long years of labour, and the expense which we have devoted to the Profession, will be driven to the necessity of seeking some other method whereby to gain a livelihood; or to condescend to those miserable devices peculiar to the *low station* which the Public seems disposed to assign us. Genius and Talent will abandon Medicine to the *Gothic invasion* of Quacks and Impostors, and seek employment in higher walks and better company.

"This is the destiny that awaits us, and the crisis is at hand. We now throw our lives into the breach, and will make at least one bold, determined effort to rescue our Profession from its impending fate. We call upon you to sustain us, and we do it confidently. Would to God, that with our *willing hearts* we could offer you the service of *abler heads*; but as the Apostles said to those who asked of them alms,—“Such as we have, we give unto you.”

"Before closing this Introduction, we must offer an apology for the size of our first number. Owing to the advice and reasons given us by many kind and experienced friends whom we have consulted in regard to the Journal, we have been induced

to alter the original plan of the work from a Quarterly, to a Bi-monthly. The amount of reading matter will be about the same, and we are induced to hope in a more acceptable form. Being smaller, the Journal will reach you more frequently, contain more recent intelligence, and perhaps be more thoroughly read.

"We have said in our Prospectus that our Journal shall be *liberal, independent and impartial*; and such it shall be our earnest endeavor to make it. Whatever credit or folly may be attached to the undertaking, will belong to the Editors alone. It is subservient to no *personal or party interest*. We pursue a *higher* and a *nobler aim*—the cultivation of Medical Science, and the improvement of its followers.

"We look to the accomplishment of these objects for our reward; and if we fail, we shall at least have the satisfaction of having *attempted something useful*.

"To the Medical Corps of New Orleans of every nation and tongue, our pages are freely offered, and their contributions are respectfully invited. Of course they can only be published in the English language, but there is no difficulty in procuring good translations.

"We now commit the enterprise to the kindness, liberality and discernment of the Medical Public, and sincerely hope that many a worthy Disciple of Esculapius will join us in the fervent ejaculation — GOD SPEED THE UNDERTAKING!!"

* * *

Through its hundred years, the *Journal* has shown several slight changes in title wording,—

VARIATIONS IN TITLE WORDING

Volume 1 (1844-45)—New Orleans Medical Journal devoted to the cultivation of Medicine and the Associate Sciences.

Volume 2-8 (1845-52)—New Orleans Medical and Surgical Journal devoted to Medicine and the collateral sciences.

Volume 9-20 (1852-67)—New Orleans Medical and Surgical Journal.

Volume 21-24 No. 1 (1868-71)—New Orleans Journal of Medicine.

N.S. Volume 1—date (1873-date)—New Orleans Medical and Surgical Journal.

* * * * *

There have also been some changes in frequency of issue as shown in the following notation:

FREQUENCY OF ISSUE

Volume 1—Six issues. (May, 1844-May, 1845).

Volume 2-13—Bimonthly. (July, 1845-May, 1857).

Volume 14—Three issues. (July-November, 1857).

Volume 15-17—Bimonthly. (January, 1858-November, 1860).

Volume 18—Three issues. (January-May, 1861).

Volume 19—Bimonthly. (July, 1866-May, 1867).

Volume 20—Three issues. (July-November, 1867).

Volume 21-24 No. 1—Quarterly. (January, 1868-January, 1871).

New Series

Volume 1-5 No. 2—Bimonthly. (July, 1873-September, 1877).

Volume 5 No. 3-11—Monthly. (October, 1877-June, 1878).

Volume 6-23—Monthly. (July-1878-June, 1896).

Old Series

Volume 49-date—Monthly. (July, 1896-date).

* * * * *

The list of the Editors of the New Orleans Medical and Surgical Journal contains many names of those who are leaders in medical thought in New Orleans and the South:

EDITORS AND ASSOCIATE EDITORS PREVIOUS TO OWNERSHIP BY THE LOUISIANA STATE MEDICAL SOCIETY

*Erasmus Darwin Fenner—May, 1844-January, 1848; January, 1854.

*A. Hester—May, 1844-December, 1853.

*W. M. Carpenter—July, 1845-May, 1848.

*John Harrison—July, 1845-March, 1849.

*Bennet Dowler—March, 1854-May, 1861.

Warren Stone—November, 1857-May, 1861; July, 1866-November, 1867.

James Jones—November, 1857-May, 1861; July, 1866-November, 1867.

*S. E. Chaillé—November, 1857-May, 1861; July, 1866-November, 1867.

*William C. Nichols—July, 1866-November, 1867.

*S. S. Herrick—July, 1866-November, 1867; July, 1878-June, 1882.

J. W. Mallett—July, 1867-October, 1868.

T. G. Richardson—July, 1867-October, 1868.

J. C. Nott—July, 1867-October, 1868.

*S. M. Bemiss—January, 1868-January, 1871; July, 1873-June, 1882.

W. S. Mitchell—January, 1868-January, 1871.

Samuel Logan—January-October, 1869.

*W. H. Watkins—July, 1877-June, 1883.

G. K. Pratt—July, 1877-July, 1878.

*John G. Godfrey—July, 1882-March, 1883.

*Rudolph Matas—July, 1882-February, 1896.

D. C. Holliday—July, 1882-June, 1883.

F. Loeber—July, 1882-June, 1883.

*L. F. Salomon—July, 1882-June, 1883.

A. B. Miles—July, 1883-June, 1891.

George B. Lawrason—July, 1883-June, 1891.

*Henry Dickson Bruns—July, 1883-June, 1891.

F. W. Parham—July, 1883-February, 1896.

P. E. Archinard—July, 1883-June, 1891.

*Augustus McShane—July, 1883-February, 1896.

J. H. Bemiss—July, 1883-June, 1891.

H. W. Blanc—May, 1887-February, 1896.

A. W. DeRoaldes—July, 1891-February, 1896.

John dell Orto—July, 1891-June, 1894.

Paul Michinard—January-April, 1892.

Will H. Woods—July 1894-February, 1896.

*Charles Chassaignac—March, 1896-June, 1922.

*Isadore Dyer—March, 1896-October, 1920.

*Those marked by an asterisk served as Editor-in-Chief (Dr. Matas).

EDITORS DURING OWNERSHIP BY THE LOUISIANA STATE MEDICAL SOCIETY

Maurice J. Gelpi—1922-1923, Editor.

Editorial Staff

Hamilton P. Jones

Urban Maes

John A. Lanford

Ralph Hopkins

Elizabeth Bass

Charles J. Bloom

John Callan

L. L. Cazenavette

Frank J. Chalaron

Isidore Cohn

Oscar Dowling

Marcus Feingold

Amedee Granger

J. B. Guthrie

J. T. Halsey

Chaillé Jamison

P. T. Talbot

H. W. E. Walther

L. R. De Buys

E. L. Leckert

H. W. E. Walther—1924-1927, Editor.

Editorial Staff

T. M. Dye—1924-1925 (Miss.)

Lucien A. LeDoux—1924-1925

Charles A. Bahn—1924-1925

J. S. Ullman—1924-1927 (Miss.)

H. T. Simon—1924-1927

John H. Musser—1927-date. Editor-in-chief.

Willard R. Wirth—1927-date. Editor.

Editorial Staff

J. S. Ullman—1927-1929; 1931-1935 (Miss.)

H. T. Simon—1927-1933

Frank L. Loria—1928-1931
 L. S. Lippincott—1929-1935 (Miss.)
 D. W. Jones—1930-1935 (Miss.)
 H. L. Rush—1930-31 (Miss.)
 G. C. Anderson—1932-1933; 1936-1940
 F. L. Fenno—1933-1935
 J. W. Dicks—1935
 H. B. Alsobrook—1935-1936
 E. L. Zander—1940-1943
 D. J. Murphy—1943-date.

J. A. O'Hara—1938-1939.
 C. A. Lorio—1939.
 D. B. Barber—1939-1940.
 C. G. Cole—1940-1941.
 King Rand—1941-1942.
 J. K. Howles—1941-date.
 E. L. Irwin—1942-1943.
 D. I. Hirsch—1941.
 C. C. deGravelles—1943-1944.
 G. C. Anderson—1943-date.

GENERAL MANAGER

Paul T. Talbot—1923-date.

Although privately owned previous to 1922, the *Journal* has throughout its course, pictured the medical thought of the local profession, and has published the papers read before our medical organizations with the exception of 1914-1917, when another local periodical, the Pan-American Surgical and Medical Journal, was the official organ of the Louisiana State Medical Society.

Since 1922, when the Louisiana State Medical Society assumed ownership and control, the administration of the Journal has been in the hands of a Journal Committee appointed by the State Society. The physicians who have served on this Committee, with the dates of their service, are noted in the following list:

MEMBERS OF THE JOURNAL COMMITTEE AND DATES OF SERVICE

H. B. Gessner—1923-1931.
 A. A. Herold—1923-1928.
 Oscar Dowling—1923-1927.
 A. O. Hoefeld—1923-1926.
 H. W. E. Walther—1923-1925.
 Lester J. Williams—1923-1924.
 C. V. Unsworth—1924-1925.
 E. M. Ellis—1925-1926.
 H. W. Kostmayer—1925-1935; 1936-1937; 1939-date.
 Lucien A. LeDoux—1926-1929; 1938-date.
 S. M. Blackshear—1926-1937.
 Paul J. Gelpi—1927-1929.
 L. J. Menville—1928-1929; 1937-date.
 Frank T. Gouaux—1929-1930.
 Randolph Lyons—1929-1935.
 W. H. Seemann—1929-1939.
 John A. Lanford—1930-1940.
 S. C. Barrow—1931-1932.
 Roy B. Harrison—1932-1933.
 C. A. Weiss—1933-1934.
 Chaillé Jamison—1934-1937.
 C. P. Gray—1935-1936.
 Maurice J. Gelpi—1935-1938.
 Charles M. Horton—1936-1937.
 W. H. Perkins—1937-1941.

The function of the local medical journal is coming to be appreciated more fully than ever before, during the past several years. Local journals constitute our chief course for the medical history of their area—descriptions of epidemics, health reports, favored therapeutic measures, biographies of physicians, hospital reports and varied miscellanea to be found nowhere else. There are less than six complete sets of the New Orleans Medical and Surgical Journal in existence, and the files in our own libraries are among our most treasured possessions. With the sponsorship of the Louisiana State Medical Society we are happily assured of a continuance of the New Orleans Medical and Surgical Journal even brighter than the record maintained in its first hundred years.

COMMENTS BY DANIEL DRAKE ON
 MEDICINE IN NEW ORLEANS
 IN 1844

J. H. MUSSE, M. D.†
 NEW ORLEANS

"The greatest physician in the West and one of the most picturesque figures in American medicine was Daniel Drake" (Garrison). Drake was the founder of two medical schools; furthermore he established the Western Journal of Medical and Physical Sciences, in its day the most important medical publication of the West. Drake was a peripatetic physician; he not only moved from place to place but also traveled extensively and the reports of his

†From the Department of Medicine, School of Medicine, Tulane University of Louisiana, New Orleans.

travels were sent back to his colleagues to be published in the medical journal that he was responsible for establishing.

It is interesting to note that Drake visited New Orleans at the time the New Orleans Medical and Surgical Journal was established. It would be impossible to reproduce completely the letters that he wrote about New Orleans but certain excerpts from "the traveling letters from the senior editor" to his colleagues will be given here.

Under the date of May, 1844 Drake wrote "... people (of New Orleans) are as agitated and restless as the atoms which float in the currents of the giant river. Such a spot presents much to interest and instruct the inquisitive physiologist and physician, and in commencing my letter, I scarcely know how to settle upon a particular topic. The hospitals of the city would seem, however, more appropriate for a medical traveler, and I shall therefore devote my letter to them, and the disease which supplies them with more patients than any other. Of these hospitals three are private and one public." The three private hospitals were the Luzenberg's Hospital, the Maison de Santé and the Circus Street Infirmary.

Of the Charity Hospital, Drake said it "is at once an honor to the city and State to which it belongs, and a blessing to thousands of the people of the United States and of Europe." He then went ahead with the story of the founding of the Charity Hospital in 1727 until the date on which his letter was written. He continued "... the average annual number of inmates of this capacious establishment . . . for the last 14 years, has been 4,576 . . . but 625 (of the patients) were natives of Louisiana. . . . is it either just or generous, that the support of a hospital, so extensively occupied by the citizens of other states, should devolve entirely on Louisiana."

Drake then pointed out that an average of 782 patients were admitted with "autumnal fever," that yellow fever in 1843 was responsible for the admission of 1,053 patients to the hospital and that of these patients 50 per cent of them died. Drake's

statistical table on yellow fever for twenty-six years is most interesting. Apparently every other year there occurred a mild or reasonably severe epidemic. In 1842 there were 410 patients admitted to the hospital; in 1841, 1,113; in 1840, two cases, and in 1939 there were 1,086. For the entire twenty-six years, 1821 was the only year in which no patients with yellow fever were admitted to the Charity Hospital.

Again quoting this distinguished author "private patients are accommodated in the Charity Hospital. Poor people of the city sometimes resort to it in sickness, and strangers may be made very comfortable in it."

Next he wrote "The wards of the hospital are admirably ventilated and kept remarkably clean; indeed the whole interior exhibits evidence of the superintending hand of woman." Of the Sisters "they are truly *Sisters of Charity*, and the sick stranger may receive his bitter dose from one of them as from the hand of the sister whom he has left behind him."

In his next letter, still under date of May 1844, Drake gave an account of the Medical College of Louisiana. He noted that "... its professors have built a new house—an edifice which will be found large enough for 150 students or more, and is planned with considerable skill. There are in it two lecture rooms, a dissecting room, a cabinet room, etc., and its exterior appearance is respectable, if not magnificent. . . . the opportunities for the study of anatomy, both healthy and morbid, are, or rather might be made superior to those of any other city in the Union, and the wards of the Charity Hospital afford opportunities for clinical observation, on many, if not all forms of disease, as ample as could be desired. These elements of medical instruction will no doubt at least prevail, and build up a great school in the metropolis of the South-west." He then wrote several paragraphs about the faculty but without mentioning names.

The next main head in Dr. Drake's letter is "Quarantine" and then he followed with "Medico-Chirurgical Society." He noted that at the meeting which he attended only

half the members were present but that the meeting was stimulating and successful.

In closing this particular letter Drake wrote of "professional brotherhood" in relation to the medical society. "Another object intended to be accomplished by this society is to unitize and harmonize the profession in New Orleans, but it is easy to perceive, that instead of working out that desirable end it is already producing the opposite. Indeed, my impression is, that from the 'nature of things' in this great city, such harmony will not show itself much before the time when the suspended materials of the Mississippi will crystalize into soluble salts, and its waters become transparent.

"New Orleans is, and must continue to

be, famous for individuality of character. . . . Our brethren participate in the general character of the place, and many are quite unacquainted with each other. But few of them have been long in the city, and still fewer, I judge, are inclined to identify themselves with various social and scientific interests . . . and this will continue till the city shall rear up her physicians among her native sons; till when, no remarkable concord and co-operation are to be expected." Drake was a true prophet. Nowhere in this country is there a city in which the medical profession is so harmonious and in which such good feeling exists between physicians as in this great Southern metropolis—and the waters of the Mississippi have not become transparent.

LOUISIANA: ITS RECORD OF MEDICAL PROGRESS 1718-1860

WILLIAM DOSITE POSTELL†
NEW ORLEANS

Probably no state in the Union can compare with Louisiana in the relationship between its civic problems and the progress of medical science, particularly in the field of sanitation. In no other American Colony were early settlers subjected to such epidemics as the first settlers of Louisiana were forced to contend against. In order to survive, the population early became conscious of the advantages and necessity of adequate medical care. As a result as the city of New Orleans became the commercial capital of the Mississippi Valley, the physicians of the city and state from necessity began to pioneer along certain lines in the field of medicine. It is true that much of their efforts were misguided, and many of their so-called "accomplishments" could for the better of all been left undone, but it is equally true that a great deal of pioneer work in the field of medical science and sanitation were inaugurated and carried out in the city and state by its physicians. In

some lines of endeavor Louisiana physicians were the pioneers in what is now the United States and in other fields they were the inaugurators in the entire South and Southwest.

In tracing the evolution of medicine in Louisiana it is possible to point out or select certain events in the past history of the state which mark a definite forward step in the development of medical science and these steps have been designated "Peaks," so-called by Dr. C. L. Danna in his book entitled, "Peaks of Medical History." For the sake of charity these "Peaks" were graphically illustrated as shown in the accompanying diagram. Naturally, there may be some controversy over their selection as the salient features in the development of medicine in the state. Some may feel that there were some omissions as outlined in the diagram and others that certain ones selected were of minor importance. However, after careful consideration these "Peaks" were selected as representing a definite progressive step in the development of medicine in Louisiana.

Very little is known of the Colonial physicians who practiced in Louisiana during the 18th century. As a whole the colony benefited by the presence of a fairly cultured class of medical practitioners, who

†From the Library of the School of Medicine, Louisiana State University.

PEAKS of MEDICAL HISTORY in LOUISIANA

1718 - 1860

<p>ERA Colonial Medicine</p> <p><i>Treatment Obscure</i></p>	<p>1736 → Founding Charity Hospital</p> <p>1770 → Decree relative to practice of physic in colony</p> <p>1778 → Establishment of a Leprosarium</p>
<hr/> Louisiana- 1803 - Purchase	
<p>ERA Brunonian Philosophic Principles of Medical Practice 1800-1825</p> <p><i>Treatment consisted of large doses of calomel and other cathartics -</i></p>	<p>1816 → Effective Medical Licensing Law enacted</p> <p>1818 → First Board of Health Law enacted First Medical Society organized Oldest extant report published in the state</p> <p>1822 (?) → First Caesarean operation in the state Dr. Prevost</p>
<p>ERA Broussais's Concept of Localized Irritation 1825-1840</p> <p><i>Treatment consisted of bleeding and more bleeding</i></p>	<p>1832 → E.H. Barlon's Monograph Louisiana's First Medical Classic</p> <p>1834 → Founding Medical College of Louisiana</p>
<p>ERA Beginning of Scientific Medicine 1840-1860</p> <p><i>Treatment based on observation -</i></p>	<p>1844 → Founding New Orleans Medical Journal</p> <p>1849 → Organization of first State Medical Society</p> <p>1854 → Appearance - Report of New Orleans Sanitary Commission</p> <p>1855 → Effective Board of Health Law enacted</p> <p>1856 → Founding of New Orleans School of Medicine</p>
<hr/> 1860 - War	

had been trained in the best French schools of that day. Fortunately, due to the frontier conditions under which the early inhabitants lived, Louisiana escaped the feuds and differences between physicians and surgeons that had torn the medical profession asunder in the Old World. A practitioner in those days was forced to be physician, surgeon, mid-wife and nurse as the occasion demanded.

It was only 28 years after the founding of New Orleans in 1718, when the population of the city was only a few hundred and the infant colony was trying desperately to survive among the low-lying swamps that the first accomplishment relating to the care of the sick may be noted. In the year 1736, a French sailor, Jean Louis, left the residue of his estate for the founding of a hospital for the poor of New Orleans. It

bore the name of St. John, and the following year Bienville wrote to the Minister in France that it served the dual purpose of hospital and asylum to the indigent poor and that it had five patients. Apparently for quite a long period of time this hospital served the poor of the city. In 1799 the building was destroyed by a hurricane, but was rebuilt soon afterwards from funds donated by Don Andreas de Almonaster y Roxas. Various claims have been advanced that this is the first hospital in the United States founded as a Charity Hospital to render medical care to the poor. The story of the Charity Hospital from its early beginning as the "L'hôpital des Pauvres de la Charité" to the present has been ably told by Dr. A. E. Fossier.¹

In the year 1770 may be recorded our second "Peak" for in that year the Governor of Louisiana, Alexandre O'Reilly, issued what is apparently the first decree relative to the practice of medicine and surgery in the Colony. It reads²: "No Surgeon shall have the right to practice surgery and medicine unless he produce his documents, his certificates of study, his books, his instruments; unless he submit to an examination before the King's physician; unless he have certificates of good character and of Catholic faith."

Rules and regulations for the duties of physicians and surgeons were also laid down in some detail and with considerable judgment, all attesting to the importance of this first medical licensing regulation.

When Antonio de Ulloa, the first Spanish Governor of Louisiana arrived in New Orleans in 1766 he was astonished to find such a prevalency of leprosy in the Colony. He immediately directed his efforts towards the establishing of a leprosarium for these unfortunates. Knowing that isolation had accomplished so much in the Old World he felt that such a policy could be most advantageously practiced here. He accordingly established a lazaretto at Balize, 80 miles below New Orleans, about the year 1768. However, it was not until sometime later either 1778 or 1785 that what may be called a hospital was established for the lepers,

made possible by a grant from Don Andres Almonaster y Roxas. This colony was known as "La Terre des Lepreaux" and operated for several years as a refuge and hospital for these unfortunates.³

After the transfer of Louisiana to the United States in 1803 a large influx of immigrants began arriving from the United States. Along with these immigrants came the American doctor who, as a whole, was not as well trained as the colonial physicians of Louisiana. They came as a rule filled with the theories of John Brown and Benjamin Rush, whose mode of treatment consisted largely of the administering of large doses of calomel and other cathartics.⁴ So many quacks were setting themselves up as practitioners of medicine that very early it became apparent that some licensing regulation was a dire necessity. Accordingly, in 1808 the Legislature passed the first act establishing the standards and procedures for those who wished to practice medicine in Louisiana. This law was ineffective as it failed to provide any penalty for failure to comply with the licensing provisions. This deplorable state of affairs continued until 1816, when a new act was passed prescribing the formalities to be observed for the practice of physic and the profession of apothecary within the State of Louisiana.⁵ Penalties were now enacted for failure to comply with its provisions.

The year 1818 may be designated as the year of accomplishments, for in that year at least three noteworthy achievements were recorded. First, an Act was passed establishing a Board of Health and setting up quarantine laws for the protection of the health of the citizens of the city and state.⁶ Secondly, the yellow fever epidemic of 1817 seems to have made it clear to the physicians that some organized effort on their part was necessary to combat the ravages of this particular disease. Accordingly, the physicians of the city banded together and organized the first medical society, Société médicale de la Nouvelle-Orléans.⁷ This society continued intermittently until 1860 and numbered among its accomplishments several studies on the epi-

demic yellow fevers, and the issuing of the first medical journal in the Deep South. Thirdly, the Société médicale issued its first report, which is the oldest extant medical item published in the state. This report was prepared by Drs. A. A. Gros and N. V. A. Gérardin and entitled, "Rapport fait a la Société médicale, sur la fièvre jaune qui a régné d'une manière épidémique pendant l'été de 1817."⁸ Apparently this report was well drawn, for it was quoted in part in the *American Medical Recorder*⁹ of 1819. The authors held that the disease was caused by the peculiar topography of New Orleans, abundant rains, excessive heat of the summer and the influx of strangers.

In 1822 (?) there was reported what may be considered the sixth "Peak" in the development of medicine in the state for about that year Dr. François Marie Prevost of Donaldsonville, performed successfully a cesarean operation, who so far as is known, was the first physician in Louisiana to perform this operation successfully and the second in the United States. After his first success Dr. Prevost performed successfully a number of cesarean operations. Dr. Prevost had been trained in Paris under the masters of that day and when he performed his first cesarean on a slave he was well equipped by knowledge and training for this difficult operation. Due to the lack of communication between members of the medical profession it was 30 years after Dr. Prevost's death that thanks to the investigations of Dr. Robert P. Harris of Philadelphia, the merits of Prevost's pioneer achievements were made known to posterity.¹⁰

In 1832 appeared what may be considered Louisiana's first medical classic: "The Application of Physiological Medicine to the Diseases of Louisiana," by Dr. E. H. Barton. In this paper, Dr. Barton urged physicians to return to the principles of Hippocrates in treating diseases, emphasizing the natural history of diseases, decried the "intemperate use of physic" and showed that in every case patients were far better off when physicians only attempted to assist nature. He pointed out the foolishness

of the excessive use of calomel, cathartics and emetics, which were in vogue in that day and also the common fallacy of blaming everything that was wrong on the liver. He urged physicians to refrain from theorizing about diseases and treatment, but to draw conclusions from their observations instead, as the only way to advance the science of medicine.¹¹

The year 1834 is memorial in the annals of medical history in Louisiana for in that year, due to the efforts of three young physicians, Drs. Thomas Hunt, Warren Stone and John H. Harrison, the Medical College of Louisiana was founded. This school, which was destined to play such an important role in medical education in the South, was the first medical school founded in the Southwest, the third in age south of the Potomac and Ohio Rivers and the fifteenth in the United States. At first the College did not own its own domicile; classes were held in rented halls or in the offices of the professors until 1840, when classes were conducted in a small house adjacent to the Charity Hospital. From this small beginning the school has had a steady growth, becoming in 1847, the Medical Department of the University of Louisiana. The University of Louisiana had been established in New Orleans two years previous. In 1884 the properties of the University of Louisiana were transferred to the Tulane University of Louisiana and the Medical Department continued in the same capacity. Later the Medical Department became the College of Medicine of the University and still later changed its name to the School of Medicine of Tulane University of Louisiana. At present over 7,000 students have received the degree of Doctor of Medicine, and the members of its faculty and its graduates have played an outstanding role in the welfare and progress of New Orleans and Louisiana.¹²

The founding of the New Orleans Medical Journal in 1844 marks the next step in the progress of medical science in the state.¹³ When the New Orleans Medical Journal began publication there was not a single medi-

cal journal published south of Kentucky and only one in that state. This journal which is now known as the New Orleans Medical and Surgical Journal has had a continuous existence until the present day, with the exception of the War years and two years during the '70's. Dr. E. D. Fenner, one of the founders of the New Orleans Medical Journal, writing fourteen years later,¹⁴ stated that the founding of this journal was in some measure responsible for the great impetus being given to medical progress in the South, for since the founding of the first "viable" journal in the South, five medical colleges, thirteen medical journals, and numerous medical societies have sprung up in the Southern states.

The year 1849 marks the first attempt of the physicians of the State to organize a State Medical Society. A resolution calling for a state convention was passed by two local societies, and as a result a few physicians assembled in the hall of the Medical College in New Orleans in March of that year for the purpose of organizing a State Medical Society. The meeting was adjourned until December of that year at which time the convention resolved itself into the Louisiana State Medical Society. Probably due to the difficulty of travel this first attempt to form a State Society was destined to failure after the 1855 session. Only a few members from the country parishes showed a desire or inclination to join or attend the annual meetings, which were held in New Orleans. Accordingly, no record of a State Medical Society exists after the 1855 session.¹⁵

Undoubtedly one of the finest reports on the sanitary condition of New Orleans with carefully thought-out and planned recommendations for the elimination of epidemics was the "Report of the New Orleans Sanitary Commission," which appeared in 1854. In 1853 New Orleans was visited by one of the worst epidemics of Yellow Fever in its history. The mortality for that year from all causes was 10 per cent of the city's population. After such a disaster the people demanded that the City Officials do something to alleviate the suffering caused

by these periodic visitations of yellow fever. Accordingly, a Sanitary Commission was appointed whose duties were to study the cause of these epidemics, and make recommendations for their future elimination. At the head of this Commission was appointed Dr. E. H. Barton, a prominent physician of the city, who had long been advocating the long delayed, much needed sanitary reforms. Under the Chairmanship of Dr. Barton the Commission made an exhaustive study of the sanitary conditions of the city and found filth enough to create a plague. After fearlessly pointing out these unsanitary conditions the Commission outlined its recommendations for the improvement of health conditions within the city. Unfortunately the city populous by the time the report was issued, had returned to their apathy in regard to sanitary reforms. The Commission's report was bitterly attacked by members of the medical profession in New Orleans and even the press became lukewarm over the sanitary reforms, since quarantine restrictions were strongly advocated. Up to the time of his death, which occurred three years later, Dr. Barton was forced to defend his proposed reforms from the vicious attacks which were made upon them and it was undoubtedly the keen disappointment in his failure to arouse the citizens of the need for sanitary reforms which caused his death.¹⁶

On March 15, 1855, an effective Board of Health Law establishing quarantine for the state was finally passed and in his Report of the Board of Health for 1882, Dr. Joseph Jones wrote, "All the great sanitary and quarantine measures of the past 27 years in Louisiana, may be directly or indirectly traced to the act 'to establish quarantine for the protection of the state.'"¹⁷

The 13th and last "Peak" which may be recorded for this early period is the founding in 1856 by Dr. E. D. Fenner and his associates of the "New Orleans School of Medicine." This school had only a brief existence but during its existence it was responsible for instituting many important innovations in medical teaching. This school operated the first out-patient depart-

ment in the Southwest; it inaugurated the first real system of clinical teaching and it maintained a home delivery service for the training of its students. The story of this school has been ably told by Dr. A. E. Fossier in his paper on the History of Medical Education in New Orleans.¹⁸

Probably in conclusion it will not be amiss to mention briefly the concept of medical practice in the state during this period. So little is known of the practitioners and their methods during the colonial period that it would be hazardous to venture an explanation of their concept of medical practice. However, during the first half of the 19th century this can be drawn with a fair degree of accuracy. From 1800 to 1825 there came to Louisiana the American physician who as a rule was not as well trained as the colonial French physicians. The men who had received their training in the East came impregnated with the philosophic principles of John Brown and Benjamin Rush, which held that all diseases are the result of an excess or insufficient stimuli upon some part of the body and treatment consisted in either stimulating or depressing the condition. To this end large doses of calomel and other cathartics were administered. This first period was followed by the theory introduced by Victor Broussais in which was advanced the notion that disease depended upon localized irritation of some organ, principally the stomach and intestine. The treatment under this concept consisted of blood letting. Then about 1840 came the reaction, when the principles of Pierre Louis showed the fallacy of theorizing without putting your theories to the test of experimentation, the beginning, so to speak, of scientific medicine.¹⁹

These then are somewhat the successive steps and principles in the development of medical science in Louisiana from its beginning with the founding of New Orleans in 1718 to the War Between the States in 1861. Unfortunately, during the War and

its aftermath, making a living was such an arduous task that little time could be devoted to cultivating any of the arts and sciences and as a result it was some years before Louisiana physicians began once more to make their contribution to medical science.

BIBLIOGRAPHY

1. Fossier, A. E.: The Charity Hospital of Louisiana, New Orleans M.&S.J., 75:728-730, 791-798, 1922-23; 76:24-31, 67-74, 128-138, 188-196, 1923-24.
2. McMurtie, D. C.: A Louisiana decree of 1770 relative to the practice of medicine and surgery, New Orleans M.&S.J., 86:7, 1933.
3. Dimitry, T. J.: Introduction of leprosy into Louisiana and the first leper hospitals, New Orleans M.&S.J., 90:113, 1937.
4. Postell, W. D.: The Principles of medical practice in Louisiana during the first half of the nineteenth century, Bull. Med. Lib. Assoc., 30:191, 1942.
5. Acts passed at the Second Session of the Second Legislature of the State of Louisiana, New Orleans, P. K. Wagner, 1816. pp. 84-86.
6. Acts passed at the First Session of the Fourth Legislature of the State of Louisiana, New Orleans, J. C. de St. Romes, 1819. pp. 70-72.
7. Postell, W. D.: The medical societies of Louisiana prior to the War Between the States, New Orleans M.&S.J., 93:65-74, 150-159, 1940.
8. Postell, W. D.: A review of Louisiana medical literature, 1796-1843, the formative years, Ann.M.Hist., 4:207, 1942.
9. Rapport fait a la Société Médicale sur la fièvre jaune qui a régné pendant l'été de 1817, par M. M. Gros et Gérardin, Med. Recorder, 2:217-224, 1819.
10. Matas, Rudolph: François Marie Prevost, New Orleans M.&S.J., 89:604, 1937.
11. Barton, E. H.: The Application of Physiological Medicine to the Diseases of Louisiana, Philadelphia, Joseph R. A. Skerrett, 1832, 55 pp.
12. Fossier, A. E.: History of medical education in New Orleans, Ann. M. Hist., 6:320-352; 427-447, 1934.
13. Bass, C. C.: The School of Medicine of the Tulane University of Louisiana, New Orleans M.&S.J., 87:506, 1935.
14. Ochsner, Alton: Early American schools: School of Medicine Tulane University of Louisiana, Surg.Gynec.Obst., 57:815, 1933.
15. Postell, W. D.: Erasmus Darwin Fenner and the beginnings of medical literature in Louisiana, Ann.M.Hist., 3:297, 1941.
16. Editorial and Miscellaneous to the Medical Profession, New Orleans M.News&Hosp.Gaz., 4:485, 1857.
17. Postell, W. D.: The medical societies of Louisiana prior to the War Between the States, New Orleans M.&S.J., 93:66-74, 150-159, August, Sept., 1940.
18. Postell, W. D.: Edward Hall Barton, Sanitarian, Ann.M.Hist., 4:370, 1942.
19. Annual Report of the Board of Health of the State of Louisiana to the General Assembly for the year 1882, Baton Rouge, Leon Jastremaski, 1883. p.42.
20. Fossier, A. E.: History of medical education in New Orleans, Ann. M. Hist., 6:320-352; 427-447, 1934.
21. Postell, W. D.: The principles of medical practice in Louisiana during the first half of the nineteenth century, Bull. M. Library A., 30:191, 1942.

NEW ORLEANS Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society
under the jurisdiction of the following named
Journal Committee:

C. C. deGravelles, M. D., Ex officio

For one year: Lucien A. LeDoux, M. D., Chairman

H. W. Kostmayer, M. D., Secretary

For two years: James K. Howles, M. D.

For three years: G. C. Anderson, M. D.,

Vice-Chairman

Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D. *Editor-in-Chief*

Willard R. Wirth, M. D. *Editor*

Daniel J. Murphy, M. D. *Associate Editor*

COLLABORATORS—COUNCILORS

Edwin L. Zander, M. D.

J. T. O'Ferrall, M. D.

Guy R. Jones, M. D.

T. B. Tooke, Sr., M. D.

George Wright, M. D.

Rhett McMahon, M. D.

C. A. Martin, M. D.

W. F. Couvillion, M. D.

Paul T. Talbot, M. D. *General Manager*

1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

THE CENTENARY ANNIVERSARY OF THE NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

One hundred years ago this Spring the New Orleans Medical and Surgical Journal first saw the light of day. Since that time, except for a two-year period during the War Between the States, this publication has been issued regularly and without other interruption. This makes the Journal one of the oldest medical journals published in the English language. Some twenty years ago the London Lancet celebrated its one hundredth anniversary and at that time

claimed to be the oldest medical journal published in English, although as a matter of fact the American Journal of Medical Sciences actually is several years older. The Boston Medical and Surgical Journal, now the New England Journal of Medicine, was established about the same time, in 1828. While the New Orleans Medical and Surgical Journal is a few years younger than these three distinguished medical publications, nevertheless it is by no means a child and is, in so far as the South is concerned, by many years the senior of any journal that is published in the South.

In this centenary number the reader is privileged to read the accounts of the Journal as presented by some well qualified medical historians. Dr. Rudolph Matas, whose knowledge is encyclopedic and who knows more of the history of medicine in the State of Louisiana than any other medical or lay individual, has prepared the leading article. Miss Mary Louise Marshall has contributed, after a painstaking review of every number of the Journal since its inception, a list of the editors who have edited the Journal. Mr. Postell has a most interesting article on the medicine of 1844 and another article which he had previously contributed to the Journal but which appears most appropriately at this time on medicine in the early days of the City of New Orleans. Dr. Fossier, whose publications on the history of Charity Hospital and medical education in New Orleans are classics, has also been good enough to prepare a paper on medical education of one hundred years ago.

Medical publications and publishing firms seem to have a tendency to longevity. Lea and Febiger, the medical publishers, has been functioning one hundred and fifty years. This is one of the oldest firms in continuous existence in the United States. Recently the publishing firm of Blakiston, which started in July, 1843, has sent out a small brochure entitled, "One Hundred Years," to mark its centennial.

During the hundred years of the existence of this state medical journal our country has engaged in five major wars; the

Mexican, the War Between the States, the Spanish-American War and the two World Wars. It was only two years after the establishment of the Journal that the Mexican war started and now on this hundredth anniversary this country is engaged in a global war which makes all other wars seem almost insignificant in comparison. Although this present war is a tremendous military undertaking, nevertheless it is doubtful if the people of our country at the present time are as profoundly affected as they were in some of the other wars, notably the War Between the States. Certainly the suffering, misery and unhappiness of the intra and interstate war were of greater width and depth than they are in the present war. It is hoped that the present World War will be the last war for many generations, although it will be many, many years before the effects of this war will have disappeared.

The Journal wishes to extend its thanks to those who have contributed to this anniversary number and who have made possible a historical survey which should be of interest to the reader and certainly will be of extreme value in the future to those interested in the history of medicine.

MORBIDITY THEN AND NOW

It is interesting to speculate on the changes that have taken place in this country in the expressions of disease and its various manifestations. Contrasting the year of 1844, when the Journal was started, and the present year of 1944, the weekly morbidity report of the State of Louisiana shows that the venereal diseases in the month of March, 1944, exceeded by far any other disease entity in that particular month. A hundred years ago syphilis was a problem and gonorrhea was equally a problem, but the other venereal diseases, such as chancroid, lymphopathia venereum, granuloma inguinale, were not known, or at least not known as such. These two diseases in Graves' Clinical Medicine, published in 1842, were of sufficient importance to warrant the author devoting some eighty pages to them. The other infectious

diseases were widespread and common. Diphtheria, then known as membranous angina, at times obtained the dignity of a plague. Typhoid fever was rampant and the epidemics of yellow fever that attacked not only New Orleans but other cities of the South are too well known to need accentuation. Nowadays typhoid fever and diphtheria are almost disappearing diseases. In the week that ended April 1, 1944, there was only one case of typhoid fever in the entire state and none of diphtheria. Yellow fever apparently has been conquered. Cholera no longer attacks our seaboards. Needless to state a hundred years ago there was no specific therapy for any of the infectious diseases. Their toll was enormous and it was the young and vigorous that these diseases attacked in the greatest number. Nowadays we have specific therapy and one might almost call penicillin and the sulfonamides semi-specific, at least they cure in the great majority of instances, whereas stimulants and sedatives, calomel and croton oil, were the remedies that were employed for the treatment of the specific infectious diseases one hundred years ago.

Pulmonary tuberculosis was a scourge. There was no telling how many patients suffered from this disease or what was the incidence of tuberculosis because the science of bio-statistics had not as yet been developed but large were the numbers of patients who had "pulmonary consumption."

As would be expected, symptomatic medicine was practiced almost entirely. Laboratory procedures, except for the examination of the urine, were almost unknown. Mechanical and physical aids for the diagnosis and treatment of disease were nonexistent; surgery was practiced only when there were traumatic injuries.

A hundred years ago malaria was a tremendous problem. As a matter of fact in going over some of the old records at the Charity Hospital it was found that in one year a third of all the patients discharged from the hospital suffered from malaria in one or another of its expressions. Perhaps

the malaria problem has only been quiescent for the last fifty years because as is well known at the present time it offers medical officers of the United States Army and Navy the greatest difficulty that they have in maintaining the health of the troops in the field.

One hundred years ago few people lived past the age of 40. More than one-half of the population of this country was under 20 years of age, whereas now the percentage of young people is only slightly over one-third of the total population. Contrariwise the number of old people is three times that of the period between 1840-50, consequently the degenerative diseases of old age were considered of minimal importance and the textbooks of medicine devoted but little space to these diseases. Arteriosclerosis was barely touched upon and hypertensive and arteriosclerotic heart disease were not known by this etiologic classification but merely as heart disease. It is interesting to note that of the various types of heart disease coming into the Charity Hospital in 1942, that 1,712 represent arteriosclerotic and hypertensive heart disease, whereas there are only slightly under 200 cases of syphilitic heart disease and slightly under this number of rheumatic heart disease.

The symptoms of heart disease were considered to be of outstanding import and greater attention was paid to these symptoms rather than to the physical examination of the patient. A quotation from Graves illustrates this point. He writes "the energy and action of an hypertrophus heart, even when not subjected to the excitement either of exercise or of emotion, is

such as to make it border on palpitation, and the patient has the annoying consciousness of the heart beating at almost all times. He is annoyed at its thus beating, and it palpates the more because he is annoyed." To the subject of the pulse pages are devoted, while to murmurs and thrills only a few pages are made use of to explain these particular signs. The occasional disease which nowadays we have to depend upon the statements of the patient to make a diagnosis are discussed better in this textbook than they are in most modern books. Angina pectoris is an excellent example.

Diseases of the urinary apparatus and diseases of the digestive system were of great prominence in those days of our great grandfathers probably because Bright had shown how important was the examination of the urine and gastric and intestinal dysfunctions must have been extremely common because of faulty dietary hygiene.

It is realized and appreciated that tremendous changes have taken place in the mechanics of living in the past hundred years, largely as result of development of certain physical apparatus which have made possible flying in the air, air-conditioned buildings, communicating through the air and innumerable other modern inventions too numerous to recount, but of all the changes that have taken place in this world probably none are as dramatic as are the transformations that have taken place in medicine in the past hundred years. May the next hundred years be as prolific in the elucidation of problems of disease and in the handling of disease states as has been the last hundred years.

ORGANIZATION SECTION

The Executive Committee dedicates this page to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

HOW IS THE EMIC PLAN WORKING?

As the physicians of this state well know, last December there was put in effect an emergency maternal and infant care program emanating from appropriations to the Children's Bureau for the obstetrical and

pediatric care of the dependents of soldiers in lower pay grades. On December 2, 1943, the Department of Health, State of Louisiana, sent out to every physician specific instructions, *modus operandi*, etc. to facilitate the working of this plan. The Executive:

Committee of the Louisiana State Medical Society, after months and months of deliberation, accepted the plan offered by the Children's Bureau under protest, believing that it was a direct step toward the regimentation of medicine by the federal government. The fee included in the original plan was raised to \$50.00 for maternity care and a specific fee for the care of sick infants. This plan was a patriotic gesture on behalf of the physicians of Louisiana for the duration of the war, the agreement as stipulated that only physicians qualified to practice medicine in the State of Louisiana would be applicable for participation.

We have now had some months' trial of this program. We have learned through our travels over the state visiting medical meetings that the medical profession is not at all satisfied with the practical applications of this medical service, not only from the physician's standpoint but from the public's standpoint as well. They experience a great deal of trouble in getting processed applications early to get adequate medical service, and incidentally the Children's Bureau has now interpreted that the fee intended for maternity care would be up to \$50.00 and not specifically \$50.00. There has been a great delay also in the processing of bills sent in by the physicians, resulting in confusion and chaos. Patients needing prompt attention would have to wait on the government for their certification before necessary and essential medical care could be instigated. The Children's Bureau in such an inadequate manner has thus belittled the profession in the attitude of the public. They have also, by premature publicity, made the program very difficult of performance. They have also threatened certain states with withdrawal of money and support provided the exact details and wishes of the Children's Bureau in every

regard and particular are not met. These directives from the Children's Bureau often conflict with state law. Before the system was put in effect the propaganda was scattered throughout the country that the delay was due to the medical profession. Now from absolute facts the reverse is the truth, and we see today a spirit of complacency on the part of the enforcement officers working under the Children's Bureau. Our state health officers have been very cooperative, but evidently from the information which we have they were possibly misled as well as the profession of the state. This in our opinion is a fair example of what we can expect if medical practice is turned over to incompetent bureaus for dissemination to the public. How can the public expect adequate and needed medical care under such conditions? All of this will probably be discussed before our approaching meeting of the House of Delegates. Right now there is being considered before the Committee on Appropriations in Congress a new appropriation of \$25,000,000 for the Children's Bureau to expand and use in this Emergency Maternal and Infant Care plan. The State Medical Society, through its executive officers, while objecting to the plan, agreed with the principle of giving adequate medical help to these families of soldiers. They preferred the allotment system for the medical care. The precedent has been established by the government contributing an allotment to the wives and dependents of soldiers. Why not do the same and let patients choose their own physicians at the time and place that suits their convenience? It is anticipated that our president, Dr. C. C. deGravelles, or some other appropriate representative from our State Society will be made to the Committee on Appropriations at their hearing on April 27 and 28 in Washington, D. C. Out of all this we do hope that some policy will be developed which will be one easy of distribution, fair to the public and to the physicians administering the service.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR OF MEETINGS

- May 1 Board of Directors, Orleans Parish Medical Society, 8 p. m.
- May 2 Eye, Ear, Nose and Throat Staff, 8 p. m.
- May 3 Mercy Hospital Staff, 8 p. m.
- May 4 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m.
Executive Committee, Baptist Hospital, 8 p. m.
- May 8 Scientific Meeting, Orleans Parish Medical Society, 8 p. m.
- May 10 Touro Infirmary Staff, 8 p. m.
Women's Auxiliary, Orleans Parish Medical Society, Orleans Club, 3 p. m.
- May 15 Hotel Dieu Staff, 8 p. m.
Clinico-pathologic Conference, Baptist Hospital, 8 p. m.
- May 16 Charity Hospital Medical Staff, 8 p. m.
- May 17 Charity Hospital Surgical Staff, 8 p. m.
New Orleans Dental Association, 8 p. m.
- May 18 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m.
- May 19 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m.
- May 19 I. C. R. R. Hospital Staff, 12:30 p. m.
- May 22 Special meeting, Orleans Parish Medical Society, 8 p. m.
- May 23 Baptist Hospital Staff, 8 p. m.
- May 24 French Hospital Staff, 8 p. m.
- May 25 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m.
DePaul Sanitarium Staff, 8 p. m.
- May 26 L. S. U. Faculty Club, 8 p. m.
New Orleans Hospital Dispensary for Women and Children Staff, 8 p. m.

various departments of the State to discuss administrative and technical problems.

Dr. Esmond A. Fatter was installed as chairman of the French Hospital Staff for 1944, succeeding Dr. Vincente D'Ingianni. Dr. Nicholas J. Chetta was installed as Secretary-Treasurer and Dr. Louis J. Gehbauer, Jr., as vice-chairman.

Dr. J. W. Davenport, Jr., addressed the twentieth annual convention of the Louisiana Hospital Association, which met in New Orleans during March. Dr. Davenport discussed the use of human red blood cells, formerly discarded when plasma was processed for transfusion, in the treatment of anemia, by intravenous injection, and as an external dressing for wounds, ulcers and burns.

Dr. Howard Mahorner attended the meeting of the Surgeons' Travel Club in Baltimore, March 15-16. March 18 he was guest speaker at the annual meeting of the Tri Beta Biology Fraternity at Spring Hill College, Mobile. His subject was "The Sympathetic Nervous System and Its Importance in Vascular Surgery."

Dr. John M. Whitney attended the Washington session of the State and territorial health officers called recently by the Surgeon General of the United States.

Dr. Chester Stewart attended the meeting of the Board of Directors of the National Tuberculosis Association March 6.

Dr. Wm. A. Sodeman was re-elected to the Board of Directors of the American Red Cross for a three year period.

NEWS ITEMS

Dr. Marie Louise Pareti participated in the conference held in New Orleans March 27 by

Dr. Grace A. Goldsmith spoke on "Studies of Nicotinic Acid Excretion" at the meeting of the Tulane-Newcomb Chemistry Journal Club.

LOUISIANA STATE MEDICAL SOCIETY NEWS

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

THE ANNUAL MEETING

While the Journal is in press the annual meeting is being held at New Orleans. It will be

impossible to give any of the details about the meeting or to tell of the happenings that occurred. However, this will appear in the next

month's issue of the Journal, together with the president's address.

SECOND DISTRICT MEDICAL SOCIETY

The Second District Medical Society met at the home of Dr. Earl Clayton in Norco on Thursday, April 13, 1944. The following members were present: Drs. Clayton, Sharp, P. A. Donaldson, Kelly, Guillotte, Massony and Atkinson. Guests were Drs. E. Countiss (speaker), Saunders (who opened discussion on Dr. Countiss' paper), Emmett Irwin, Tim Talbot and W. B. Clark. It was a pleasant meeting preceded by a delicious buffet supper served by our hostess, Mrs. Clayton, and her charming young married daughter. The next meeting will be held in Laplace on Thursday, June 22.

EAST AND WEST FELICIANA BI-PARISH

After a bounteous repast in the dining room of the East Louisiana State Hospital the Bi-Parish Medical Society repaired to the staff room for the business and scientific program of the society.

Dr. C. S. Stern was elected Member of the Society; Dr. Glenn J. Smith, Chairman of Program Committee.

The staff of the East Louisiana Hospital furnished the program which was very interesting and instructive to those present.

The Society adjourned to meet in Angola, Louisiana, the first Wednesday in June, 1944.

Dr. M. A. Walker, President.

Dr. E. M. Toler, Secretary.

VERNON PARISH MEDICAL SOCIETY

At a regular meeting of the Vernon Parish Medical Society held January 6, 1944, the officers elected December 2, 1943, to serve for the ensuing year were installed. They were as follows: Dr. Wm. M. Johnson, President, Dr. Wm. E. Reid, Vice President, Dr. Edgar M. Shaw, Secretary and Treasurer, Dr. M. W. Talbot, delegate to State Meeting, and Dr. W. E. Reid, alternate.

On February 9, 1944, a regular meeting of the Vernon Parish Medical Society was called to order by the President. Following the usual business three members of the new hospital board were elected as follows: W. M. Reid, Wm. M. Johnson, and E. M. Shaw.

This, as all of our meetings, was a 100 per cent attendance, six paid up members being present. Refreshments were served.

Edgar M. Shaw, M. D.,
Secretary-Treasurer.

NEWS ITEMS

A course in electrocardiography under direction of Dr. Louis N. Katz will be held at the Michael Reese Hospital, Chicago, April 21-September 2. The fee for this course is \$110.00.

There is great need in government hospitals of occupational therapists. Announcements regarding the details of the dates, qualifications, salary range, and so on are on file in the Journal office.

The well known publishing firm, The Blakiston Company, has sent out a brochure entitled "One Hundred Years Afterwards." This tells of the development of the medical publishing business which has been extended over this period of time.

The annual banquet of the Southern Baptist Hospital Staff was held on the roof of the Jung Hotel, Tuesday, March 28. A most interesting and enjoyable meeting gave pleasure to those who attended.

CHARITY HOSPITAL STAFF MEETING

The Medical Section of the Charity Hospital Visiting Staff had a regular monthly meeting on Tuesday, April 18, in the auditorium of the hospital. The first paper was presented by Dr. Thomas Findley who reported on two patients with herpes zoster who were treated by paravertebral novocaine block, with the prompt and immediate cessation of their pain and with remarkable clearing up of their skin lesions. Dr. R. L. Pullen presented a patient and gave a report of his case. This man had diverticulum of the upper third of the stomach which was producing well marked symptoms and which was associated with considerable loss of weight. The roentgen rays showed beautifully the diverticulum. The last presentation on the program was the recounting of the treatment given to a patient with subacute bacterial endocarditis by Drs. E. L. Burns and N. R. McKrill. Large quantities of penicillin and heparin were given to this patient and there was a cessation of the positive blood cultures and disappearance of the fever. The patient died suddenly as result of cerebral hemorrhage and at autopsy it was found that there was very definite evidence of disappearance of the vegetations on the affected valves. Nothing more was seen but slight roughening of these areas which previously probably had extensive vegetations.

LOUISIANA TUBERCULOSIS ASSOCIATION

The 20th Annual Meeting of this organization was held in the Jung Hotel New Orleans, Monday and Tuesday, April 17-18. The program was arranged by Dr. Maurice Campagna, Chairman of the Committee, with Dr. Edgar Hull and Miss Beatrice Hodge. Dr. J. L. Wilson, president of the organization, presided at the several sessions. Amongst the Louisiana physicians taking part in the program were Dr. I. L. Robbins, Dr. C. A. Stewart, Dr. R. Alec Brown, Dr. John Whitney, and Dr. J. C. Menendez. Dr. C. E. Lyght, National Tuberculosis Association, appeared sev-

eral times on the program. He gave some splendid talks.

AMERICAN FEDERATION FOR CLINICAL RESEARCH

The New Orleans section of this organization met March 28 at the L. S. U. Medical Center. A most interesting program was presented and evoked considerable discussion. The program was as follows: Comparative Study of Thromboangiitis Obliterans in White and Negro Patients by Dr. Harry A. Davis; Sarcoidosis by Dr. Byron M. Stuart; Relation of Prolactin to the Inception and Maintenance of Lactation in Experimental Animals by Dr. W. Lane Williams; The Blood Supply of the Sternum; X-Ray Studies of Injected Sternums Showing Venous Return by Dr. Philip Pizzolata.

HEALTH OF NEW ORLEANS

The Bureau of the Census, Department of Commerce, reported that for the week ending March 18 there were only 125 deaths in the City of New Orleans, divided 83 white, 42 colored, with six infant deaths. The number of deaths recorded this week is well below the three year average for the corresponding week. For the week terminating March 25 there were 127 deaths in New Orleans divided 78 white, 49 colored, with 15 deaths in children under one year of age. There was a slight drop in the number of deaths in New Orleans for the week ending April 1. Of the 119 deaths 82 were in the white and 37 in the colored, with 7 infant deaths, divided between the two races. The week which closed April 8 showed that of the 116 deaths in New Orleans 78 were white, 38 were non-white and six were in infants. This past month has shown really quite a remarkable reduction in the number of deaths in the city as contrasted with a three year average of the corresponding period.

INFECTIOUS DISEASES IN LOUISIANA

The Louisiana State Board of Health reported that for the week ending March 18 the following diseases were reported in numbers greater than 10: Measles 68 cases, mumps 55, chickenpox 54, hookworm infestation 43 and pulmonary tuberculosis the same, scarlet fever 17. Measles was rampant throughout the state during the week ending March 25 as evidenced by the 333 cases that were listed this month. The following diseases in order of their frequency are recorded: 87 cases of mumps, 84 of pulmonary tuberculosis, 60 of influenza, 26 of hookworm, 21 of chickenpox, 13 of scarlet fever, 12 of pneumonia, and 10 of typhoid fever. The typhoid fever cases were scattered all over the state, with no one parish reporting more than two cases. The first week in April is the week in which the venereal diseases are recorded for the month. In this month there

were listed 1,618 cases of syphilis, 1,455 of gonorrhea, 89 of chancroid, and 11 of granuloma inguinale. Of the other reportable diseases there were 121 cases of measles, 48 of mumps, 39 of pulmonary tuberculosis, 30 of chickenpox, and 15 of pneumococcic pneumonia, as well as 15 of unclassified pneumonia. One case of poliomyelitis was reported this week. Two hundred and fourteen of the cases of syphilis and 428 of the cases of gonorrhea were reported from military sources.

CORRESPONDENCE OF IMPORTANCE

March 31, 1944.

Dr. John H. Musser, Editor,
New Orleans Medical & Surgical Journal,
1430 Tulane Avenue,
New Orleans, Louisiana.

Dear Dr. Musser:

Noting in the last issue of the Journal that you desire information relative to how our Senators and Congressmen stand on Bill 1161, I am handing you herewith copies of correspondence which would indicate that our Senators and Congressman Brooks from the Fourth District can be relied upon to side with us. I thought you might want these to publish in the April issue.

Sincerely,

A. A. Herold, M. D.

Hon. James W. Byrnes, December 14, 1944.
Chief War Mobilization,
c/o White House,
Washington, D. C.

Dear Judge Byrnes:

This is an appeal to you, which the writer and others wish would be forwarded to President Roosevelt, to forestall any action on the highly objectionable Senate Bill 1161, extending Social Security, including regimenting the medical profession and others, for the following reasons:

1. Dissension of tremendous import is bound to come throughout the country, which would impede the war effort and we all agree that winning the war is the greatest thing to be desired at the time.

2. In the interest of the Democratic Party, it is desirable that no more splits be presented, but a united front is necessary if it is to have the backing of those who would be affected by such radical legislation.

I feel that this appeal is being made to the proper party in order to save the country from further domestic squabbles and thereby aiding the enemy and feel that all right thinking members of Congress will back the Executive Department if it should take such a stand.

Respectfully yours,

(Signed) A. A. Herold, M. D.

CC Hon. Overton Brooks
Hon. John T. Overton
Hon. Allen Ellender.

C O P Y

UNITED STATES SENATE
Washington, D. C.
December 20, 1943.

Re: Legislation—S. 1161

Dr. A. A. Herold
North Louisiana Clinic
1130 Louisiana Avenue
Shreveport, La.

Dear Dr. Herold:

In the absence of Senator Overton permit me to acknowledge copy of your letter to Justice Byrnes which you were kind enough to send to Senator Overton and which contained your views on S. 1161.

In response, permit me to say that Senator Overton does not look with favor upon the enactment of this measure and I am certain it is his intention to vote against it.

Permit me to thank you for advising the Senator of your views on this question.

With best wishes, I am

Very truly yours,

(Signed) M. A. Gaumer,
Assistant Secretary to
Senator Overton.

C O P Y

CONGRESS OF THE UNITED STATES
HOUSE OF REPRESENTATIVES
Washington, D. C.

December 27, 1943.

Dr. A. A. Herold
North Louisiana Sanitarium
Shreveport, Louisiana

Dear Doctor Herold:

This will acknowledge receipt of a copy of your letter addressed to Honorable James W. Byrne requesting that it be called to the attention of the President, regarding Senate Bill No. 1161.

I wish to say that I, myself, am against legislation generally which will tie up and hamstring the medical profession throughout the United States. In the State of Louisiana, especially, the doctors have maintained the medical profession at a high level which has brought credit and honor upon a noble profession. The doctors generally go on errands of mercy, relieving suffering and distress throughout the country, and I believe they should be supported in their efforts to carry on work which ranks high upon the list of professions on this earth.

I thank you very much for sending me a copy of your letter, and with best wishes, I am

Sincerely yours,

(Signed) Overton Brooks, M.C.

JAH

C O P Y

UNITED STATES SENATE
Committee on Agriculture
and
Forestry.

December 18, 1943.

A. A. Herold, M.D.
North Louisiana Clinic
1130 Louisiana Avenue
Shreveport, Louisiana
Dear Dr. Herold:

Receipt is acknowledged of copy of your letter addressed to Hon. James W. Byrne, Chief War Mobilization, with reference to the Wagner-Murray bill, S. 1161.

Recently one of my constituents wrote me in opposition to the bill, and for your information I am enclosing a copy of my reply, in which I have outlined my views on the subject. After you have read the enclosed letter, I shall appreciate receiving any further suggestions you may care to submit, and I assure you they will receive my careful study.

With kind regards, I am,

Sincerely yours,

(Signed) Allen J. Ellender.

AJE:La

C O P Y

November 18, 1943.

Dear Mr.....:

This will acknowledge your letter of recent date, in which you express your opposition to the Wagner-Murray bill as presently drafted.

While in Louisiana during the summer recess of Congress, I had the pleasure of attending and addressing briefly a meeting in New Orleans of members of the medical profession. As I stated at this meeting, I am opposed to any effort to inaugurate socialized medicine in this country. Proposals of this nature have been submitted to the Congress in the past, and such proposals have received very little backing. I am confident that the socialized medicine provision of the Wagner-Murray bill will not be reported favorably in its present form.

Up to this time the Senate Education and Labor Committee has considered legislation affecting the medical profession, but the pending bill was referred to the Senate Finance Committee for study and hearings. I presume that was done because the bill also embraces a revision of the Social Security laws, including additional taxes on employers and employees. I am not a member of the Senate Finance Committee, but I intend to take a very active interest in the Wagner-Murray bill if and when it is presented to the Senate.

At the recent meeting in New Orleans, I sug-

gested to those attending that the medical profession ought to be prepared to come before the Senate Finance Committee when the Wagner-Murray bill is considered, and make constructive suggestions as to how our country's health standards can be improved. It is not enough for the medical profession simply to express opposition to a proposal of this kind—it should be prepared to offer something better.

The public recently was considerably surprised and shocked to learn from Selective Service that of the youth of the nation called for military service, only about fifty percent of those examined could meet the physical requirements. Because the general physical condition of so many of our boys was below standard, the Army and Navy were forced to lower their physical standards, and even when that was done, only about thirty-eight to forty percent of the selectees were found eligible to serve in the armed forces. I am sure you will agree with me that is an astounding and disappointing average. There is no doubt that this condition is responsible to a considerable degree for the inclusion of a socialized medicine provision in the Wagner-Murray bill. It is my sincere belief that the medical profession would be serving the best interests of itself and our nation as a whole if it should study the underlying causes behind the current agitation for socialized medicine. I have been in the Senate for almost seven years, and it has been my experience that the best way to combat unwise legislative proposals is for the interested parties or professions to show a willingness to cooperate with the legislators in arriving at a workable solution to the problem and if possible offer something better. I feel confident that if the medical profession will adopt that attitude in its representations to the House and Senate Committees, you need not fear that the Congress will impose socialized medicine on our country.

I would appreciate receiving from you further information or suggestions with respect to the pending legislation.

With kind regards and best wishes,

Sincerely yours,

(Signed) Allen J. Ellender.

C O P Y

January 8, 1944.

Hon. Allen J. Ellender,
U. S. Senate,
Washington, D. C.

Dear Senator Ellender:

Permit me to thank you sincerely for your kind letter of November 18th, which was sent to some other doctor. I am gratified to learn of your views, especially as it has been reported in some quarters that you were rather antagonistic to our professional aims, which I could not believe in view of the fact that you have two excellent phy-

sicians in your family in the persons of your brother and nephew.

Referring to your valued suggestion relative to the medical profession doing something to remove the stigma resulting from the draft boards rejecting so many applicants, may I call your attention to the fact that from my limited experience I find that one draft board will accept a man and another will reject him with the same defects, so that there is no unanimity of action by the various boards. Further, if a condition exists so bad as is pictured by the findings of draft boards, please do not blame the medical profession, as I feel that the complaint should be largely placed on the individuals who do not seek medical attention and who do not have periodic physical examinations, which most doctors would do for any fee commensurate with a man's ability to pay and even gratis for a man with no funds—at least, that is the system in vogue in Shreveport today. Please remember also, that the medical profession is one which tries its best to prevent disease and to cure the sick rapidly, thereby apparently working against its own interests, which situation does not exist in regard to other professions and trades.

Let me close by again thanking you for your interest in this matter and to assure you that it is appreciated, not only by me, but by my associates to whom I have shown your letter.

Sincerely,

(Signed) A. A. Herold, M. D.

AAH:h

Note:—No reply to this.—A.A.H.

LETTERS FROM LOUISIANA OFFICERS IN THE ARMED FORCES

April 14, 1944.

Dr. Paul Talbot, General Manager,
New Orleans Medical and Surgical Journal,
New Orleans, La.

Dear Dr. Talbot:

Just a line to get my address changed so I will keep getting the Journal. My old address was San Diego, Cal., but now it is Fort McArthur, Cal. I enjoy getting it and hope you will make the change.

I've been out here on the coast for over two years now and haven't had a chance to get to N. O. since 1941. It's right nice out here though and I have a good job. I saw Dr. Ochsner the other day and saw Dr. Harris about a month ago in Pasadena so I get news from home every now and then.

Good luck to all of you and if I get back to our part of the country will drop in and see you.

Prentice Gray.

Address:

Lt. Col. Courtland P. Gray Jr MC
Hdq. So. Cal. Sector, WDC
Fort McArthur, Cal.

April 14, 1944.

Dr. P. T. Talbot, Sec.
La. State Medical Society
1430 Tulane Avenue
New Orleans 13, La.

Dear Paul:

See "by the paper" you are having a State Medical Meeting this year. I hope I can be at the one next year.

We are so far out here that it is refreshing just to think of a medical meeting. There are lots of interesting things we see and observations we might make on military medicine in general, but to do so might give away the location of our ship.

It all adds up to a great life and we all hope to get the war won and back to the "Battle of The Home Front."

Best wishes and all good luck.

Sincerely,

Dave Womack.

Commander David R. Womack, M. C.
United States Naval Reserve
U. S. S. Black Hawk
F. P. O., San Francisco, Calif.

WOMAN'S AUXILIARY

LOUISIANA MEDICAL AUXILIARY PRESIDENT HONORED AT LUNCHEON

It is with much regret that your chairman missed such a lovely luncheon, honoring our State President, and I take the liberty of publishing the account of this bright occasion as it appeared in the local paper:

"The handsome ante bellum home of Dr. and Mrs. Rhodes Spedale here was the scene Thursday afternoon of last week of a luncheon honoring Mrs. George Taquino of New Orleans, who in April will retire as president of the Louisiana Medical Society Woman's Auxiliary. Mrs. Spedale is the president-elect of the auxiliary and will take office in April, when installation will be held at the state meeting in New Orleans during the latter part of April.

"The spacious living and dining rooms were festive with arrangements of pink dogwood, oriental magnolias and calla lilies. In the dining room luncheon was served from the handsome polished table, which was centered with a large bowl holding wedgewood iris, yellow iris and bridal wreath in a mass arrangement.

"Mrs. Taquino spoke briefly calling members' attention to the state convention in April and asking support of the campaign on cancer control. April is cancer control month for the organization.

"Attending the luncheon were Mrs. D. T. Martin and Mrs. Percy LeBlanc of Donaldsonville; Mrs. D. W. Landess of Port Allen; Mrs. Frank Tomeny of White Castle, Mrs. Tuten of Bayou Goula, Mrs. R. D. Martinez, Mrs. E. C. Melton and Mrs. S. C. Levy, of Plaquemine; Mrs. U. S. Hargrove, Mrs. Lionel Lorio, Mrs. Cecil Lorio, Mrs. Felix Boizelle, Mrs. J. A. Sanford, Mrs. Rhett McMahon, Mrs. Arthur Long, Mrs. Wiley Dial and Mrs. Frank Jones who is president of the East Baton Rouge organization, all of Baton Rouge; Mrs. C. Grenes Cole, Mrs. R. D. Harrison, Mrs. Paul LaCroix, Mrs. Waldemer Metz, Mrs. Aynaud Hebert and the honoree, Mrs. Taquino, all of New Orleans."

SHREVEPORT MEDICAL SOCIETY

The Shreveport Medical Auxiliary paid special tribute to Doctor's Day with a fine exhibit on display in a prominent show window in the business section. This exhibit was quite successful from an educational standpoint, depicting "The Progress of Medical Science." Among the items of special interest displayed were the relics of prehistoric medicine, also books, pictures and instruments used throughout the intervening years. There were also envisaged a night-marish concept of what would follow if the proposed Murray-Wagner Bill for socialized Medicine were enacted by law.

Mrs. J. M. Gorton, Doctor's Day Chairman of the Shreveport Auxiliary and her committee composed of the following ladies, Mrs. D. Kerlin, Mrs. C. R. Mays, Mrs. W. B. Heidorn, and Mrs. C. R. Gowen, State Chairman, are to be highly commended for such a splendid exhibit and "it was indeed gratifying," as an observer said, "to see the reaction of the large crowds that stopped to look and remained to look some more."

An article on "The Doctor's Day" appeared in the Shreveport Journal, reprinted from Hygeia magazine. It is most fitting and I pass this on to you who have not already seen it: Secure a copy of this magazine and read it!

It has been a privilege to serve you as Press and Publicity chairman this past year. I appreciate your fine spirit of cooperation and thank each auxiliary that has furnished me with material, making it possible for me to give you the much deserved publicity.

I have enjoyed my year's work immensely, making new friends and learning to know old ones better. It has been a good year for me and I thank each one of you for your help.

Mrs. M. C. Wiginton,
Press and Publicity Chairman.

BOOK REVIEWS

Burma Surgeon: By Gordon S. Seagrave, Lt. Col., M. C., U. S. Army Forces in China, Burma, India. New York, W. W. Norton Co., 1943. Pp. 295. illus. por. Price, \$3.00.

This is the story of the life and work of an American doctor—a pioneer of our own times, of whom we have recently learned through accounts of the war in Burma.

Dr. Seagrave is a medical missionary, the son and grandson of missionaries. Born in Burma, trained at Johns Hopkins, he has for years waged a personal war against malaria, dysentery, plague, and the other diseases which periodically devastate Burma and the Far East area. The doctor is a pioneer in the traditional American sense. Under primitive conditions, he established hospitals and trained native girls as nurses and operating assistants.

Cooperating actively, first with the Chinese Army, when the war came to Burma, Dr. Seagrave was commissioned as an officer in the Medical corps of the U. S. Army. With his unit, he joined General Stilwell in his retreat to India and the book ends with the day by day account of that tragic trek through the jungle. This is essentially a medical book; it is replete with the medical incidents of the doctor's daily life, its catastrophes and emergencies and the expedients invoked to meet them.

As Dorothy Canfield Fisher says, "From Dr. Seagrave's own quick, flaming story, you can get the authentic thrill, the sweep, the inspired life which comes from contact with greatness of heart."

MARY LOUISE MARSHALL.

The Boy Sex Offender and His Later Career: By Lewis J. Doshay, M. D., Ph. D., New York, Grune & Stratton, 1943. Pp. 206. Price, \$3.00.

No one understands sex delinquency. Some day we may. While the prospects for improvement are poor, this book of knowledge on the subject should help much.

Ignorance and misconceptions regarding sex problems are due to numerous causes. Those who are personally involved become panicky lest the facts be disclosed; others avidly seek all the scandalous details and such attitudes toward sex anomalies do not encourage objective observation.

The studies detailed in this report of Dr. Doshay are an original contribution by way of a new approach based largely upon the observation of clinical facts rather than upon theory. The valuable suggestions for prevention and treatment are the result of mature reflection, based upon extensive clinical experience. The reports of success, in court and clinic-treated cases, are beyond expectation, and these cases merit further study both as to de-

tails of psychosexual adjustment and for a longer period in adult life.

From an experience of ten years of daily work in handling problems of juvenile delinquency, the author charts the salient factors of environment and personal make-up that produce the boy sex offender and determine his later career. The study outlines objective criteria for prediction of the adult outcome. The figures of the study are derived from carefully checked court records.

Analyzed statistics indicate that delinquency is on the increase and that the rate among girls is increasing much more rapidly than among boys. It is felt that the causes of delinquency remain the same as before the war and are lack of supervision, lack of recreation, migration, broken homes and similar factors. It appears that psychotherapy is only an effective treatment for the neurotic offender.

This book is of vital, immediate interest, informative, authoritative and conscientious.

C. P. MAY, M. D.

Clinical Diagnosis by Laboratory Methods: By James Campbell Todd, Ph. B., M. D., and Arthur Hawley Sanford, A. M., M. D. 10th ed. rev. Philadelphia, W. B. Saunders Co., 1943. Pl. illus. Pp. 911. Price, \$6.00.

This tenth edition of a well-known text of clinical pathology measures up to the excellence of its earlier appearances. The chief changes in the book are the inclusion of much new material such as the fluorescent dye method for staining tubercle bacilli. There is a discussion of the significance of porphyrins in the urine. Methods for determining the quantity of sulfonamides are included. The section on serodiagnosis of syphilis has also been revised. The book can be recommended without reservation.

VINCENT DERBES, M. D.

Clinical Tropical Medicine: By Z. Taylor Bercovitz, M. D., Ph. D., New York. Paul B. Hoeber, Inc., 1944. Pp. 957. Price, \$14.00.

The need for texts on Tropical Medicine is being met by new works from both sides of the Atlantic. "Clinical Tropical Medicine" by Bercovitz, has been prepared by twenty-seven American specialists; of these, seven are full-time officers of government agencies, with an advisory board of three distinguished scientists, Professor Cort, of Johns Hopkins University, and Colonels Craig and Vedder, of the U. S. Army, giving assurance of the quality of the work. According to the preface, the present volume is designed to assist the general practitioner, officers in the tropics, and medical students. The work is composed of 11 sections, as follows:

- I. The Diarrheal Diseases
- II. Diseases Caused by Blood Protozoa

- III. Diseases Caused By Spirochetes and Spirilla
- IV. Diseases Caused By Rickettsiae
- V. Diseases Caused By Viruses
- VI. Diseases Caused By Bacteria
- VII. Nutritional Diseases
- VIII. Diseases Caused By Yeasts and Fungi
- IX. Infections With Helminths
- X. Tropical Snakes and Poisonous Insects
- XI. Effects Of Heat, Hygiene, and Sanitation

Naturally the discussions of the different subjects vary in type and scope by reason of the number of authors, thus African and South American trypanosome infections are treated in separate chapters, whereas the several forms of typhus are dealt with under one head. Some of the articles are well illustrated, others could be improved by well-chosen illustrations. Doubtless, in some instances, limitations of space have led to compromises in the scope of presentations. Practitioners will be especially interested in the parts of the monographs dealing with clinical medicine, in which the following are noted: Under bacillary dysentery it is suggested that "Polyvalent serum might be administered in large doses," a sufficiently non-committal statement, doubtless reflecting the author's uncertainty as to the value of the material. In the article on poliomyelitis the orthodox treatment by complete bed rest is mentioned and the "Kenny treatment" is somewhat more fully discussed. Under undulant fever brucellin is spoken of rather favorably while vaccine therapy is regarded as disappointing. In connection with the treatment of snake bite, where anti-venim is mentioned, but hardly recommended, the stress properly falls on incision and suction. There appears to be undue emphasis on laboratory procedures in the diagnosis of smallpox; for practical purposes, smallpox still is to be recognized by clinical methods. Mention of "sulfa" drugs to prevent the secondary fever in smallpox would be better as a suggestion for research than as one for routine clinical application. In the discussion of infestation with *Tunga penetrans* no mention of treatment is made. From the point of view of one interested especially in preventive medicine the following comments seem justified: We are not given a clear indication of the author's view as to what should be done with the large number of carriers of *Endamoeba histolytica* disclosed by carrier surveys. Doubtless the lack of any clear statement reflects the uncertainty of specialists in this field, as to just what should be recommended from the public health point of view. Under typhus, delousing is mentioned but no methods are given, an omission that is remedied by a discussion in the section on relapsing fever, which, however, omits the newer methods of killing body lice by chemicals. Under the discussion of smallpox we find no mention of the hemorrhagic type which so often has been the starting focus from which epidemics have developed. The suggestion of an incision half an inch in length for smallpox vaccination will be regarded by

most as providing for an unnecessarily large insertion of virus. As complications of smallpox vaccination, we find references to post-vaccination encephalitis and generalized vaccinia but nothing on post-vaccination tetanus, doubtless because the latter has become so infrequent. In the article on rabies there is a wise conservatism as to the value of prophylactic vaccination. The question as to the method of drastic cauterization as a first-aid treatment against rabies is answered in the negative. Under the differential diagnosis of lymphogranuloma venereum from tularemia the suggestion occurs that the latter is likely to be contracted from wild rabbit pelts. It would have been more helpful to have the suggestion that a tularemia lesion in the groin would likely be due to infection from a tick. Vaccination is the only procedure mentioned under prophylaxis of typhoid fever; doubtless the author considers other measures as common knowledge. The text gives no data on the geographic distribution of chiggers (harvest mites). These and other points that might be mentioned do not detract seriously from the value of the book which should be useful to the groups for which it is intended. No special attempt has been made to find editorial errors but it has been noted that in the discussion of laboratory methods in intestinal protozoa Dr. D'Antoni's name has a superfluous "n", and in the discussion of Yellow Fever reference is made to the group of scientists working under Major Walter Reed in 1900 as a "Commission"; the correct designation is "Board."

G. W. McCox, M. D.

Strophanthin: By Bruno Kisch, M. D. New York, Brooklyn Med. Pr. 1944. Par. charts, Pp. 158. Price, \$4.00.

This book consists of an exhaustive survey of the subject of strophanthin, including an historical account of the introduction of the drug, its chemical nature, pharmacology, and clinical application. In addition to numerous references to the literature throughout the text a bibliography of approximately 800 papers is appended. A discussion of the pharmacology of strophanthin occupies the major portion of the volume. It consists essentially of its effects on the various functions of the heart and on the circulation as a whole, various points being illustrated by original experiments of the author with tabulated results and electrocardiograms. In the clinical section also, the author draws freely on his personal experiences with the drug. One is impressed with the similarity of the action of strophanthin to the recognized action of digitalis. Certain characteristics, however, such as the lesser cumulative effect and greater rapidity of action even than that of the injectable preparations of digitalis are stressed and certain specific clinical conditions are cited in which strophanthin is believed to be the drug of choice. The stated purpose of the book is to acquaint the physicians of Amer-

ica with strophanthin and to dispel the disrepute into which the drug has fallen due in large part to clinical accidents from overdosage. So convinced is the author of its importance as a therapeutic agent that he emphasizes "for the patient's sake it is the duty of every physician to become well acquainted with the properties of this drug and not put it aside for psychologic reasons." At least, convincing evidence is presented that adequate doses of the drug may be used with safety.

RALPH G. SMITH, M. D.

try, and the education methods and control of accidents in industry, are taken up. Each subject is discussed by an individual who is particularly interested in that phase of industrial health. The presentation of these problems is colored by the thoughts of the author.

The work represents, in general, a stimulating discussion of each of these aspects of industrial health, with emphasis on the newer and more important problems together with current figures and statistics of interest to all those working in this field.

W. A. SODEMAN, M. D.

On the Influence of Trades, Professions, and Occupations in the United States, in the Production of Disease: By Benjamin W. McCready, M. D. (With an Introductory Essay by Genevieve Miller, M. A.) Baltimore: The Johns Hopkins Press, 1943. Pp. 129. Price, \$1.75.

This little volume represents a reprint from the Transactions of the Medical Society of the State of New York, published in 1837.

Dr. McCready wrote on the subject of the influence of trades, professions and occupations in the United States in the production of disease as a subject proposed for one of the annual prize essays given by the Medical Society of the State of New York at that time. The author had been out of medical school just two years when the essay was written. He later developed into one of the better known physicians and teachers in the medical schools of New York City.

The reprint will be of interest to all who are engaged in activities touching upon occupational diseases for it was written at a time when occupational disease was practically an untouched field in this country. It was with some difficulty that McCready covered facts concerning the effects of various types of work upon the employee's health and the discussion presents to those interested in the history of occupational diseases a study of the problem a little over a hundred years ago.

There is an introduction by Miss Miller in which a setting is given for the work of Dr. McCready.

W. A. SODEMAN, M. D.

Health Education on the Industrial Front: The 1942 Health Education Conference of The New York Academy of Medicine. New York: Columbia University Press, 1943. Pp. 63. Price, \$1.25.

This booklet represents the publication of the papers given at the 1942 Health Education Conference of The New York Academy of Medicine. This, the third Health Education Conference held by the Academy, dealt entirely with industrial problems. Such subjects as wartime industrialization of the community and its health implications, food and nutrition in the home and in the work place, disease and handicap detection and control in industry, mental problems and morale in indus-

Human Constitution in Clinical Medicine: By George Draper, M. D., C. W. Dupertuis, Ph. D., and J. L. Caughey, Jr., M. D., Med. Sci. D. New York, Paul B. Hoeber, Inc., 1944. Pp. xi + 273, 29 figs. Price, \$4.00.

The work carried on in the Constitution Clinic of the Presbyterian Hospital in New York City, by and under the direction of the senior author of the present volume, is already generally familiar. Doctor Draper's two previous books on the subject (*Human Constitution*, 1934; *Disease and the Man*, 1930) and a series of papers by him and his collaborators have done much to further interest in the constitutional aspect of medicine. This book, *Human Constitution in Clinical Medicine*, has promise of accomplishing still more in the way of propaganda for a clinical approach which is all too often neglected, and even sometimes despised.

The central theme of the book is "understanding the man within the patient:" "the man" cannot be appraised except when viewed as a totality, and with rapport between physical and patient. All possible aids are combined toward evaluating how the patient "has responded and will tend to respond to the onslaughts of environment." Supplemented by the biography, these aids are available in morphologic traits (as determined by anthropometry, somatotyping and observation), physiology (especially utilizing the electrocardiogram and spirogram), immunology and psychology. Numerous case reports serve to illustrate the method of analysis. The specific topics discussed are indicated in the chapter headings: perception and response; history-taking, or clinical biography; genetics and clinical medicine; growth, development, decline and death; mosaic of adrogyny; problems of observation, correlation and interpretation; anthropometry; somatotypes; constitutional physiology; constitutional physiology-clinical applications; problems and examples in the clinical use of constitution studies; unity of the organism. A bibliography of 156 titles is provided.

Clear, lively style and excellent typography make for easy reading on an important subject. Although designed for medical students, the book should appeal equally to many practitioners; it deserves careful study by medical teachers. A work

of this character encompasses territory in which there is room for differences of interpretation, and a thoughtful reader will find added zest in the challenge by these differences.

HAROLD CUMMINS, Ph. D.

PUBLICATIONS RECEIVED

D. Appleton-Century Company, New York and London: Textbook of General Surgery, by Warren H. Cole, M. D., F. A. C. S. and Robert Elam, M. D.

W. W. Norton and Company, New York: Burma Surgeon, by Gordon S. Seagrave, Lieut. Colonel, M. C., U. S. A. F. in China, Burma, India.

Lea & Febiger, Philadelphia: Laboratory Methods of the United States Army, edited by James Stevens Simmons, B. S., M. D., Ph. D., D. P. H., Sc. D. (Hon.) and Cleon J. Gentzkow, M. D., Ph. D.

Elimination Diets and The Patient's Allergies, by Albert H. Rowe, M. D.

W. B. Saunders Company, Philadelphia and London: Female Endocrinology, including Sections on the Male, by Jacob Hoffman, A. B., M. D.

Grune & Stratton, New York: Rorschach's Test, I. Basic Processes, by Samuel J. Beck, Ph. D.

C. V. Mosby Company, St. Louis: Industrial Ophthalmology, by Hedwig S. Kuhn, M. D. Synopsis of Diseases of the Heart and Arteries, by George R. Herrmann, M. S., M. D., Ph. D., F. A. C. P. Synopsis of Neuropsychiatry, by Lowell S. Selling, Sc. M., M. D., Ph. D., Dr. P. H.

The Psychiatric Institute of the Municipal Court of Chicago, Chicago, Illinois: A Dynamic Era of Court Psychiatry, 1914-1944, edited by Agnes A. Sharp, M. A., Ph. D.

POSTELL—*Medical Literature in Louisiana*

(Continued from Page 513)

vailed at Alexandria, Louisiana, in the autumn of 1830, Transylv. J. M., 4:229, 1831.

35. Harris, E. B.: Cases of the epidemic yellow fever prevalent at New Orleans in the summer and fall of 1833, Am. J. M. Sc., 14:41, 1834.

36. Heustis, J. W.: Observations on the disease which prevailed in the army at Camp Terre-sur-Boeufs in June, July and August of 1809, Med. Reposit., 3ns:33, 1817.

37. Lawrence, J. V. O. B.: Dissection of subjects dead of yellow fever, made at New Orleans, during the years, 1817, 1818, and 1819, Phil. J. M. & Phys. Sc., 1ns:2-13, 252-269, and 2ns:19, 1825.

38. LeBeau, J.: Case of premature puberty, (Communicated in a letter to Dr. Dewees), Am. J. M. Sc., 11:42, 1832.

39. Lemoine: Rapport sur une relation de l'épidémie de fièvre jaune qui a régné à la Nouvelle-Orléans en 1839, Rev. méd. franc. et étrang., 4:321, 1840.

40. Malignant bilious remittent or yellow fever, in New Orleans, Med. Reposit., 20:269, 1820.

41. Millard, E. M.: Case of severe compound fracture of the leg, successfully treated, Grand Coteau, La., Am. J. M. Sc., 23:368, 1839.

42. Peck, Clarendon: Notes on the progress of vegeta-

tion or blooming of plants at Sicily Island, Catahoula, La., Transylv. J. M., 8:207, 1836.

43. Thomas, L. F.: Rapport fait à la Société médicale sur l'épidémie de fièvre jaune qui régné à la Nouvelle-Orléans pendant l'été et l'automne de 1837, J. Soc. med. de la Nouvelle-Orléans, 1:57, 1839.

44. Thomas, P. F.: Relation de l'épidémie de fièvre jaune qui a régné pendant l'été et l'automne de 1841 à la Nouvelle-Orléans. Bull. acad. de méd. 7:1016, 1841.

45. Thomas, P. F. (Secretary-General): Replication of the Medical Society of the State of Louisiana to a statement of the yellow fever as it occurred in New Orleans in 1819, Med. Reposit., 7ns:75, 1822.

46. Randolph, R. C.: Remarks on the endemic yellow fever of New Orleans during the summer and autumn of 1822, Med. Reposit., 21:165, 1821.

47. Tidyman, P. A.: A sketch of the most remarkable diseases of the negroes of the Southern States . . . Phil. J. M. & Phys. Sc., 12:306, 1826.

48. Townsend, P. S.: Account of the introduction of the yellow fever into Pensacola and New Orleans in the year 1822, New York M. & Phys. J., 2:315, 1823.

Journals

49. Journal de la Société médicale de la Nouvelle-Orléans. 1 (January-November) 1839.



BUY
WAR BONDS



New Orleans Medical

and

Surgical Journal

Vol. 96

JUNE, 1944

No. 12

THE PRESIDENT'S ADDRESS*

THE PROGRESS OF MEDICINE AND SURGERY IN THE UNITED STATES IN THE LAST FIFTY YEARS AND WHAT THE FUTURE HOLDS FOR IT UNDER THE WAGNER-MURRAY-DINGELL BILL

C. C. deGRAVELLES, M. D.

NEW IBERIA

When I say that it is a pleasure and a great honor to address you at this time, I am not merely indulging in the conventional introductory remark. I have a high regard for this organization, its members and its activities.

I dare say that no branch of science has made more progress in the last fifty years than has the science of medicine.

It is a truism that progress depends on the acquisition and diffusion of knowledge. Before he had speech, man could have been but little better than his brute neighbors, although if he then had any skill with his hands and knew how to make and keep fire, these things gave him advantages. But speech having been acquired, it served, until he acquired knowledge, to perpetuate and to multiply error in regard to the world at large, its nature and governance, and to spread fear and superstition.

Gradually, gods, devils and witches assumed control of the unknown, and as priests and shamans developed, their chief office was to appease and placate these strange beings. So for centuries and ages the main and only defenses against disease were prayers, magic, incantations, sacrifices and taboos.

In early times there was no system of physic; each sufferer, like the beasts of the

fields, using such means of cure as instinct dictated, or afterward, as was suggested by another sufferer who had derived benefit from certain remedial agents, an account of which he was required to deposit in some public place or temple. This was the early custom in Assyria, Egypt, and Greece. As votive tablets and other like documents accumulated in the temples, they were suitably arranged, revised, and transcribed by the priests *to whom only* they became accessible and who consulted the work, which was known as the "sacred book," to find the remedies applicable to the cases of disease under their observation. Such, in Greece, was the practice until the great reformer Hippocrates came to the front and finally established a sound system of medicine, bequeathing to the world such an imperishable record of his greatness in the science and literature of the healing art. Notwithstanding the Hippocratic school, the priests, who had a powerful hold on public credulity, would not relinquish the practice of healing diseases in their crude way and, for a long time, continued to be the medical advisers of the majority of the Greek people. In Egypt, none but the priests were permitted to minister to the sick and, says Herodotus, there was one specially devoted to the treatment of each kind of disease. There, then was the birth of specialism. Among the early Israelites the prophets, priests, and Levites were the only physicians. This ancient custom of combining the offices of physician and priest was adopted by the Christian clergy and prevailed, with but few exceptions, until the middle of the eighteenth century.

Early man moistened his bruises with sa-

*Delivered at annual meeting April, 1944.

liva, he extracted the thorns which lodged in his flesh, he used a pointed stick to dig sandfleas from his skin, he put leaves or mud or clay on his wounds, he tasted herbs and some he spat out and some he swallowed, he was rubbed or stroked when in pain, his broken bones were splinted with branches, and when bitten by a venomous animal he sucked the poison from his body or his friends did it for him. Medicine is a natural art, conceived in sympathy and born of necessity; from these instinctive procedures developed the specialized science that is practiced today.

America is the youngest of the great nations, and if it seems strange that we know no more of the first English physicians in America than of the first Greek physicians in Rome, the same reason is operative in both instances. Eminent physicians remain at home, if for no other purpose than to annoy their rivals, and are not likely to be found on the first ship that touches a new shore.

The practitioners who first set foot on American soil have left us nothing except their names. Among the Jamestown pioneers were the physicians Thomas Wootton, whose possible knowledge of dietetics was of little avail, since he was compelled for a considerable time to subsist on crabs; and Walter Russell, who treated both Captain Smith and an Indian chief. The following year, Anthony Bagnall, surgeon to the fort, while visiting his patients, received an Indian arrow through his heart. It seems that young America did not agree with these medical adventurers, who soon disappeared from the colony. In the fall of 1609, the valiant John Smith, being wounded by the explosion of a bag of gunpowder, was compelled to return to England, "for there was neither chirurgion nor chirurgery at the fort." Upon the arrival of Lawrence Bohun in Virginia, he was appointed physician-general of the colony, for he had no competition; in the spring (1611) he sailed with the sick Lord Delaware to the West Indies and was killed by a Spanish warship.

The *Mayflower* carried 102 passengers from the old to the new Plymouth; they landed in winter, and the snows covered half of them; a dozen men, and a small group of women and children, saw the first summer. Among the survivors was the butcher's son, Samuel Fuller, deacon and physician. He had been married thrice before coming to America, but of his medical education we know nothing.

As the sole practitioner in the settlement, he was in considerable demand, and his death during a smallpox epidemic (1633) "was most deeply lamented by the colonists." The combination of preacher-physician—called by Cotton Mather an "angelic conjunction"—or even preacher-physician-pedagogue, was common in early America, since one profession did not suffice for a livelihood. For example, John Wilson, who graduated at the first Commencement of Harvard College (1642), is described as "pastor, schoolmaster, and physician." The practice of law was sometimes added, and almost invariably the physician was also a farmer.

There was no real American medical literature until after the Revolution, when Benjamin Rush (1745-1813) came into prominence. Five medical schools were started in the United States before 1800, but only two survived, those of the University of Pennsylvania (1765) and Harvard University.

American medicine has no antiquity, but in the young story are bold deeds. By candle-light in a New Hampshire town, a surgeon saw a lad bleeding to death from a wounded artery in the neck; it was too late to seek trained assistants, and aided only by the patient's mother, he saved the fast-ebbing life; he rode off on horseback without plaudits—he had been rejected by Harvard because he lacked the preliminary education—but he was the first in history who tied the common carotid. In America the ligature was first placed around such important arteries as the innominate subclavian and common iliac. In the backwoods of Kentucky a woman was first relieved of ovarian tumor, and among the

wilds of Canada the human stomach was first seen and studied *in situ*. An American pen wrote the first burning protest against the slaughter of mothers in child-bed, and an American knife removed the vesico-vaginal fistula from the hopeless afflictions of the female sex.

A primitive forest on our northern border surrounded the laboratory where chloroform was discovered. From the Massachusetts General Hospital first arose the vapor of ether that has spread like a benediction over the earth. The injection of cocaine into nerves, the production of spinal analgesia, and the localization of surgical shock, are of American origin. Other nations have watched us suture blood vessels, grow tumors, transplant organs, rejuvenate tissues, cultivate nerve-cells outside the organism, and produce normal larvae by chemical means from the unfertilized eggs of the sea-urchin. The fatherless frog was born in America.

Medical progress has been no accident. Too little is heard these days about the record of medical men in bringing modern medicine to every part of the country.

This is a big country. It is not chance alone that has placed the last word in medical equipment and technic within reach of nearly every emergency. The doctors, in cooperation with local communities, have been largely responsible. But they could not have done it without the help of a central medical organization constantly disseminating the results of scientific research and discovery.

That organization has been the American Medical Association. Of its task, *Hygeia* has this to say: "The changes of a developing civilization, great as they have been, are slight compared to the prodigious advances in medical science, largely in the last half century. It is this circumstance of prodigious medical advance on which the American Medical Association was built. It educates its members—through meetings, exhibits, its many periodicals, its councils and its committees and in many other ways. The benefits of all these ac-

tivities have been passed on to the public—the ultimate consumer."

Medical science in this country has not "just grown." It was created and made available to all by the American medical system.

The American Medical Association is a national society of physicians, founded in 1847, as a result of a national convention held in 1846, to raise the standard of medical education in the United States. Its present membership is more than 98,000. Its purposes are to promote the science and art of medicine; to organize the medical profession and safeguard its interests; to elevate the standard of medical education and practice; to bring about the enactment of uniform legislation for the public welfare; and to protect public health and form public opinion in regard to problems of hygiene. The association publishes "The Journal of the American Medical Association," and five other scientific journals, dealing with special fields of medicine, as well as "Hygeia"—A Journal of Individual and Community Health.

One of the most famous American practitioners of the past fifty years was Sir William Osler (1839-1919), Canadian by birth, who taught and practiced many years in the United States, and whose "Principles and Practice of Medicine" is the best English textbook of our time.

In the short span of fifty years—really short as history is written—American medicine has moved forward to a position of universally recognized world leadership. It has provided a more effective and more widely and evenly distributed medical care than had ever been provided anywhere at any time.

It was only yesterday—as the time is measured—when cholera and smallpox marched unchecked back and forth across continents, killing half the populations of vast areas and wiping out entire towns and villages. These dread killers have been checked. During this period of fifty years typhoid fever, diphtheria, diabetes, tuberculosis, pernicious anemia and a score of lesser ailments have been made to yield to

the science and skill of the American physician. Actually, during this short period, the life span of man has been doubled. In 1790 the life expectancy was 35 years—today it is 62 years. These achievements are without parallel in the history of the progress of mankind.

Medical attention in 1943 was focused particularly on penicillin. Especially significant were advances in anesthesia, including spinal anesthesia and the injection of anesthetic substances directly into the blood. In surgery, attention was focused, because of the war, on the treatment of infected wounds and on shock. The exceedingly low mortality rate for the wounded was accredited to these several factors. The birth rate for 1943 was the highest in the history of the United States, increasing to 24 births per 1,000 population. Nineteen forty-three was the fourth year in succession in which the birth rate increased.

Such facts are the best possible tribute to the achievements of American medicine. And, at the same time, they are the best possible argument against any change in our medical system that would regiment, socialize, or otherwise disrupt the practice of medicine in this country. Our kind of medicine is private medicine. Under it, the patient is completely free to select the doctor of his choice. There is no compulsion, and a doctor's success is not dependent on his political affiliations. That is the kind of medicine which has given the American people the finest average standard of health on earth.

An insidious bill intended to increase Federal control over the private lives and affairs of the American people was introduced in the Senate on June 3, 1943, by Senator Robert F. Wagner, of New York, on behalf of himself and Senator James Murray, of Montana. It is known as Senate Bill No. 1161. This is one of the many bills introduced in recent years which seemed so absurd on the face of them that nobody would suppose they had a chance of becoming law. But sometimes they do. For that reason I am alarmed at every piece of proposed legislation, no matter

how preposterous and impossible it seems, which threatens to extend Federal control over everything.

Senate Bill No. 1161 proposes nothing less than to buy up the medical profession in the United States and run it as a government monopoly. The price would be a part of approximately \$12,000,000,000, which the bill proposes to raise annually by taxation, mainly from pay roll taxes. Of this enormous sum \$3,000,000,000 is to be allocated each year to provide medical care and hospitalization for the American people. Administration of this magnificent medical monopoly, according to the bill, would be in the hands of the Surgeon General of the Public Health Service. He would have power and authority to hire doctors and establish rates of pay. This would probably mean that he would indirectly determine the salaries of all private doctors, if there should happen to be any of them left in business. He would establish fee schedules for all surgical and medical services. He would decide the qualifications of specialists. He would determine how many patients a physician might have, and decide arbitrarily what hospitals or clinics could provide services for patients. It is needless to say that this would place a great deal too much power and authority in the hands of one man, or one Federal bureau. Actually it would be the power of life and death over the American people. It would make medicine and surgery one of the world's greatest political rackets. It seems incredible that anybody will take this bill seriously. But two Senators, at least, thought it worth while to introduce it in Congress.

The medical profession of the United States looks upon this legislation with great concern. It views the possible results with absolute alarm. There has never been a time when the medical profession of the United States has not been equal to whatever health emergencies and demands made upon it. It has always been free to carry on teaching and practice without hamper or hindrance from any person or agency. It has enjoyed the freedom of initiative and

enterprise, as have others in our country. The Wagner Bill takes away the privilege of the doctor in exercising his own judgment and perfecting himself by constant study and research. Freedom of action based on his own judgment, medical teaching, and the confidence as exists today in the patient's mind for him, will be destroyed. Initiative and incentive have made excellent doctors, to such a degree that we have now the finest type of medical practice in the world—in surgery, general medicine, preventive medicine, research and the various specialties.

The bill does not reach the indigent who will still be left to the care of other Government agencies. It has no provision for long-continued hospitalization as required for the tuberculous, the chronically crippled, or insane. This large army of helpless persons will still be wards of the Government, while workers are compelled to pile up enormous sums of money under the Wagner Bill, supposed to be spent upon themselves. With all this great amount of money it can be easily seen that little, if any, of it will be used toward helping the sick or hospitalizing sufferers, because of the tremendous red tape and army of operators who will absorb much of the funds before it reaches the proper place.

Dr. Morris Fishbein in *Hygeia* says: "In its consideration of various plans for providing people with medical care, the American Medical Association has emphasized that the quality of medical service is paramount. The conditions associated with the administration of medical service must be examined with relation to their effects on the quality and sufficiency of such service.

"The health of the nation cannot be guaranteed by any formula which places the economics of medical service above the advancement of medical science and the quality of medical service.

"In every Governmental directed or compulsory system of medical service the quality of the service is inevitably diminished in the attempt to decrease costs, particularly when the added burden of Govern-

mental administration is placed on the funds available for medical care.

"In the years that have passed since the Federal Security Agency was established, its division for the study of medical care has come forward with only one proposal—a nation-wide system of compulsory sickness insurance administered from Washington. The practice of *preventive* medicine is barely recognized by the Wagner-Murray-Dingell Bill.

"One of the chief difficulties arises from the attempts of the Bill to provide a single system of medical care for every portion of the country.

"The standards of living of the people of the United States are generally recognized as the best in the world. No doubt there are areas in which the standards of living are much lower than in other areas. The problem concerned is not, however, how to give *less* of everything to *all* the people but rather how to give more and better of everything to *all* the people.

"Doctors realize that food, fuel, clothing and shelter are even more important in the prevention of disease than immunization or periodical physical examination.

"The tendency to place responsibility for the intimate affairs of his life on the *individual* and to limit responsibility to *local* rather than federal control may well be *fundamental* in the maintenance of the American democracy."

American doctors are unalterably opposed to the establishment of a government-dominated medical system. Typical is the comment of Dr. Edward Cary, former president of the American Medical Association, who declares that: "This country has been drifting away from competitive enterprise, without which the present high standards of American medicine could never have been reached. Socialization of medicine or any other profession would start us backward to the dark ages."

Proponents of socialized medicine cannot expect the very same doctors who now vehemently protest the destruction of their freedom, to don the shackles of legislation such as the Wagner-Murray Bill and con-

tinue to serve with unimpaired efficiency: The doctors have a tradition of freedom behind them just as have the rest of the people. They are used to living in and being part of a society of free men. In proposing to set them apart from this society, they are confronted with an appalling prospect.

We cannot destroy the economic freedom of doctors, any more than we can destroy the freedom of any other group and expect unrestricted medical achievement. This fact might as well be faced. All the laws and bureaucratic decrees in the world will not give the nation first class medical service. Only the doctors can do that; and they can only when there is opportunity for individual progress and achievement.

By the initiative of free enterprise, with Government in the traditional role of umpire, the United States has become a nation of production miracles. History proves there is no other way to achieve real progress. ARE WE TO STEP BACKWARDS NOW?

MEMORIAL ADDRESS*

JAMES Q. GRAVES, M. D.
MONROE

At this time in the proceedings of our society, we pause with bowed heads, to pay tribute to the memory of our distinguished fellow co-workers, who have passed away during the last year, to associate ourselves with those that mourn them, and to give thanks to God, for the noble services they have rendered to their communities and to our profession.

Every man has the right to be judged by his best. It is a wise instinct of the human heart, which prescribes that the good qualities, the virtuous deeds, and the unselfish services, are the things which should be underscored, in those who have departed, this earthly scene. It is as it should be, for in spite of our failures, these nobler aspects of human life are the goals

toward which we are striving, it is where we find our deepest satisfaction, it is where we feel truly ourselves.

Our profession, by its nature and tradition, affords great opportunities for worthwhile endeavors. Like we, our colleagues and friends belonged to the great tradition of medicine. That tradition started a long time ago. Through the centuries, tireless and patient efforts have made it what it is. Kings and queens have come and gone; empires have risen and fallen; economics and social systems have had their dawn and their setting; but the great tradition of the art of healing flows on and will flow on. When in any generation a man makes a contribution to it, he has made an investment which will be here as long as humanity endures.

Our departed comrades have brought their share, to this common treasure, and for this, as well as the particular gifts given by their several personalities, we are grateful and we do pay them our tribute.

Their names are as follows:

	<i>Age</i>	<i>City</i>
Dix Henry Alverson	63	Shreveport
Rufus E. Applewhite	54	Winnsboro
Adolphe Arthur Aucoin	81	Plattenville
William Franklin Bell	68	Plain Dealing
Hector Emile Bernadas	64	New Orleans
F. V. Boyd	65	Opelousas
A. M. Charlet	74	Belle Alliance
Robert William Cooper	47	Shreveport
Patrick Henry Fleming	53	St. Martinville
L. J. Genella	69	Kenner
Erwin Lowe Gill	42	Shreveport
Frank Theophile Gouax	61	Lockport
(Past-President)		
Henry Larkin Green	63	Shreveport
Allen Walker Martin	61	Bogalusa
Fred J. Mayer	84	Opelousas
(Past-President)		
Joseph White Murphey	66	Monroe
M. R. Purnell	74	Shreveport
Thomas Stark	79	Thibodaux
David Frederick Waide	60	Metairie
Clarence John Wichser	53	New Orleans

The curtain has fallen upon the lives of these noble men, their brilliant careers have

*Delivered at the sixty-fifth annual meeting of the Louisiana State Medical Society, April 25, 1944.

come to a close, but, let us not think of this as an hour of parting. It need not be that. It may even be an hour of deeper fellowship during which we can now sympathize more fully with what was wise and generous and lofty in our former colleagues and friends.

How best can we honor them? Surely not by words. Praises will not reach them, nor was it for praises that they lived. They lived for things, the accomplishment of which lies in our hands. We best honor them as we recognize their efforts, as a trust given to us all, and as we accept their labors, as our legacy of duty.

"Life is like a story in volumes of three,

The past, the present, and yet to be,

The first is finished and laid away,

The second we are living day by day,

The third and last of volume three,

Is locked from our sight, God holds the key."

PEACE AND HEALTH*

REGINALD FITZ, M. D.
BOSTON, MASS.

During my medical lifetime I have seen develop what seems something very curious in the medical line. Until 1927, seventeen years ago, there was no particular interest on anyone's part in medical economics or socialized medicine. Then, suddenly, these subjects came to the forefront with a rush and have continued to occupy a prominent position on the medical stage ever since. There must be a background behind such an apparently rapid growth of a large literature and a wide interest in the problems of medical economics, and their complex relations to medical practice, having reached such a conspicuous position as they hold at present and discussed as they are by doctors and laymen alike, easily may modify the future of medicine in this country in a variety of ways.

One of the advantages of studying medical history is that by acquiring a conception

of medical trends in the past, one may be able to estimate the significance of current trends at any time, and through attempting to place current trends in their true perspective in the pattern of medicine as a whole, one may be able to predict their probable effect on the future.

There have been left behind entertaining bits of evidence which show that doctors and the public for a long time have been in the habit of working together in order to improve public health, and which suggest quite convincingly that medical progress cannot be made unless, on the one hand, doctors are alert, and on the other, they develop popular support.

More than two hundred years ago, for example, one of my fellow Bostonians, Dr. Zabdiel Boylston, attempted to prevent smallpox by inoculation. He took the public into his confidence as best he could by telling them what was known of the matter in a small pamphlet called "Some Account of What Is Said of Inoculating or Transplanting the Smallpox With Some Remarks Thereon." It is true that he did not achieve any striking success, apparently because so few people believed him; and, indeed, Dr. Benjamin Waterhouse, nearly a hundred years later, found it extremely difficult to convince people that they need not have smallpox unless they wished to. He knew that they could be protected against it by the simple expedient of an artificially produced attack of the cow-pock. But when he told his friends this, he ran into ignorance and superstition and made the wise observation that when a doctor tells the public about anything new in medicine he will encounter three kinds of persons: a small number of imaginative men and women who like to grasp at new ideas and to act on them promptly; a larger number who, on general principles, refuse to accept any innovation of any sort and struggle against change; and finally, a majority who are noncommittal, wishing to wait and see how new schemes develop before they are willing to support or reject them.

Smallpox continued to thrive in Massachusetts for fifty years after vaccination

*Presented as a Commencement Address at Louisiana State University School of Medicine, December 20, 1943.

was described. It was only when enough of the doubtful became sufficiently convinced as to pass a law making the vaccination of school children compulsory that the disease disappeared.

An entertaining book was published in Philadelphia in 1745 by Benjamin Franklin called "An Essay on the West India Dry-Gripes With the Method of Preventing and Curing That Cruel Distemper." Many modern medical students do not realize that West India Dry-Gripes is merely a euphemistic term for lead poisoning. In New England we well knew the clinical manifestations of this disease because the manufacture of rum was so popular. When our customers began to complain that the pleasant habit of imbibing our best New England product, which customarily was distilled through lead pipes, was apt to be followed by a painful stomach-ache or peripheral neuritis, trade fell off and we found it a comparatively simple matter to pass a law forbidding, henceforward, the use of such pipes for distillation purposes. When people discovered, after this law was enforced, that they could again sip their toddies with impunity, everyone was happy and regarded the medical profession in high esteem for their wisdom: the manufacturers, because business improved so rapidly; and the purchasers, because they could now say with jubilation that there was not even an ounce of discomfort in a barrel of their favorite mixture.

Ninety-four years ago, in 1850, a certain Boston schoolmaster, Mr. Lemuel Shattuck, published a book which had a great deal to do with the formation of our state board of health. In this year he wrote "A General Plan for the Promotion of Public and Personal Health." It seemed to him that people ought to be made to take care of themselves whether or not they wished to do so. For he thought that good health was public property. He proposed that the state should enter the practice of preventive medicine by studying public health matters through accurately maintained vital statistics and by carefully controlled research. He advocated medical inspection of school

children and periodic examination of apparently healthy people. He realized that a vast amount of ill-health was preventable. He firmly believed that, on the whole, the prevention of disease was more important than its cure.

This book is still well worth reading not only because it is the parent of our present state departments of health but also, which is perhaps more significant, because it was written by a man without any medical training.

These episodes serve to illustrate a long-standing principle. To advance medicine most advantageously doctors and the public must work together. Doctors do not know everything, have no monopoly on health matters, and even if they had, what the public believes of their work deserves consideration. Unless the people carry forward what doctors ask them to do and co-operate with them, but little that is constructive will happen; and conversely, if the people have ideas on anything connected with medicine, doctors must be open-minded and receptive to such ideas as are reasonable and promising.

War may have an unpredictable effect on medical history. During the Spanish-American War nearly one out of every five soldiers who enlisted developed typhoid fever and thus the whole country at once became typhoid conscious. This fact gave a great boom to a variety of public health measures. No one objected to having typhoid fever stamped out, and presently different states began to take into their own hands not only typhoid control but also the control of other infectious diseases by distributing diphtheria antitoxin and vaccine virus or similar products — products that previously had been dispensed through private physicians. Recently someone has suggested that malaria promises to be to the present war what typhoid fever was to the Spanish-American War. If this proves true, we can expect again as comparable an increased infiltration of public health activities into what was originally private practice as followed in the train of the Spanish-American War.

The first World War released dams of many hitherto quiescent currents. A number of doctors learned from their military service what good medical organization means; the relation of modern laboratory methods to diagnosis and treatment; the value of systematic history taking and physical examination; the difference between haphazard and skilled medical or surgical therapy. A certain number returned to civilian life asking themselves whether it might not be possible to conduct civilian medicine on a military-like basis, with a highly organized profession under able leadership working as a unit to bring to the sick and wounded of the community all that is best in advancing knowledge.

The war was eventually followed by a period of economic depression, but this was preceded by one of extraordinary prosperity, when money was made perhaps too easily. In the good times, new and expensively-built hospital plants were established, new laboratories were built, new equipment was manufactured and sold, and good medical care became increasingly more effective and costly. When the depression came there was no longer money available to carry on the great overhead expense that had been set up and the question arose as to what should be done.

It is interesting that medical men first began to worry about the increasing expense of medical care not after the depression had made itself felt but beforehand—in times when business was at its peak. In 1927 a committee was formed to study the costs of medical care and from that date the ramifications of medical economics began to seem like a cinder in the public eye.

This committee soon made preliminary reports of its various investigations but did not complete its work for five years. Then, in 1932, it compiled a summary of its labors in the form of a book called "Medical Care for the American People." This book, like Shattuck's, still deserves careful study.

The members of the committee were not in entire agreement. The majority appeared to be what might be termed medical progressives and believed that a radical re-

form in medical practice was badly needed. They hoped to see develop soon a form of medical service throughout the country furnished by groups of physicians working as teams, organized around hospitals, and rendering complete home, office and hospital care to their communities. They advocated full extension of all basic public health services and these, of course, should be available to the entire population. They anticipated that to be effective such a method of medical care must be financed on a group payment basis, probably through a combination of voluntary or compulsory insurance and taxation, and that agencies to coordinate and administer such complicated machinery should be established in each state and in every local community.

The minority were more conservative. Their views represented, as one reviewer said, a strong bid to keep things as they were: at all costs to discourage any possible competition by the government in the practice of medicine. They wished to see maintained the dignity of the general practitioner. They opposed the idea that medicine should ever be practiced in any co-operative form. They advocated the cautious exploration of further development of institutions and agencies already in existence without interfering with the time-honored personal element of practice which demands the right of free choice of physician on the part of the patient.

The book was circulated widely and provoked much discussion. How much effect it had on what actually has taken place is difficult to ascertain because there have been so many complicating factors. In any event, a variety of experiments in voluntary health insurance soon commenced, group practices of different kinds sprang up, and even industry began to try its hand at doctoring despite the outspoken dislike for this sort of thing by many physicians.

The last few years have not helped the confusion caused by the first World War: a new war has developed; taxes have increased steadily; the expense of good medical care has not diminished; living costs have risen so that housekeeping bills for

hospitals or medical schools or homes are no less than they were; and institutions which depend in large measure on income from endowment for their upkeep have suffered. So far as hospitals go, two contrivances have been of undoubted help in assisting the ones not under city, state or federal control: voluntary insurance plans like the Blue Cross, and voluntary grant-in-aid as furnished by Community Chests.

No one knows to what extent voluntary efforts can be expanded to ensure the best of medical care to the entire country at reasonable expense. But it is very clear that revenues derived from taxes have risen with unfailing regularity for a number of years and that the share of such increased revenues which have been allocated to improvement of health in one form or another has grown proportionately and, on the whole, has been well spent. As a result, if one defines as state medicine all medical undertakings supported by federal, state, county and municipal funds, everyone will agree that for a long time there has been a steady trend for state medicine to expand, lately perhaps at a faster rate than heretofore because of the various vicissitudes of the past few years. The introduction of a bill before Congress advocating complete governmental control of nearly all medical activities is not an illogical conclusion to all this, though whether the time will ever be right in the United States to have such a bill passed is an entirely different matter.

Young doctors of today will play an important part in shaping the destiny of American medicine for tomorrow. Being privileged to serve their country during a period of national emergency they will acquire new wisdom by virtue of the sacrifices they will be asked to make. Having been ready to run all risks for freedom they will comprehend what freedom means as those of us at home cannot.

As a general rule the graduates of any modern medical school occupy themselves in one of four large fields: they practice medicine, they teach medicine as professional teachers, they investigate disease with the idea of developing new knowledge, or they occupy full-time positions in such branches of medicine as public health or industry. It is likely that those who have served as medical officers in the Army or Navy will look for careers in one of these fields.

Doctors serving in the armed forces are acquiring first-hand knowledge of how a medical practice under government control may operate. Some will become conscious of the effectiveness of a smoothly running, highly organized medical machine and will wish to transfer elements of its complicated structure to civilian life; others will be irked by its impersonality and will wish to return to old-fashioned ways as soon as possible, striving to rebuild the relation between patient and doctor which was so intimate.

Teachers of the future will have observed the end results of the accelerated curriculum. Some will feel that acceleration has lowered standards and that doctors produced too rapidly lack much of the skill and necessary experience or breadth of viewpoint that comes from properly guided study; others will think that the type of medical education that has flourished for so many years is obsolete, that it was unnecessarily long, and that it created too strong a tendency toward premature specialization. All who are interested in the field of education will endeavor to build up postgraduate medical education to the level it should reach, probably by the perfection of short courses such as are now being given successfully at various base and station hospitals all over the world and by elaboration of the prolonged training in medical centers where specialists and teachers will be made.

Those with original minds and a talent for investigation will follow critically the accomplishments of the Office of Scientific Research and Development. For such new medical knowledge as will be forthcoming while the war lasts will be discovered largely through the influence of this office. Some will believe that such an office should continue and that Federal funds, carefully administered, should be set aside for the specific purpose of making new research possible; others will think that it is unwise for the government to continue in medical research, sensing the danger of political entanglements and lack of intellectual independence which is so essential to productivity.

There will be assured opportunities for those interested in public health and industrial medicine. New problems in public health control seem to be enlarging constantly, and the proper feeding of undernourished war-worn peoples, the prevention of tropical diseases and the improvement of international hygiene would seem to promise almost endless opportunities for large numbers of properly qualified doctors. Industrial medicine, too, is developing with astonishing rapidity. The general principle of supplying workmen with medical supervision and of developing methods to prevent loss of time from illness or accident is so sound that it is certain to go forward.

Dr. Benjamin Waterhouse was a keen observer and a shrewd judge of human nature. Human nature has not changed very much since his time. To advance medicine most advantageously doctors and the public must continue to work together. Unless the people carry forward what doctors ask them to do and cooperate with them, but little that is constructive will happen; and conversely, if the people have ideas on anything connected with medicine, doctors must be open-minded and receptive to such ideas as are reasonable and promising. I suspect that as young medical officers return to civilian practice and begin to play their part in helping to determine the future of medicine, as did he, will find that there are

three classes of persons: the reformers who will be eager to grasp at new ideas and to act on them promptly; the conservatives who will refuse to accept innovations and will fight strongly against change; and a majority who will wish to see by critical experimentation how new schemes develop before they are willing to adopt them for general use.

After the war, doctors will have a responsibility heavier than ever before in guiding the public most wisely in medical matters. The effect of war on the course of medicine is unpredictable. If the trend towards state medicine continues, the eventual outcome is plain; but, on the other hand, a wave of conservatism may follow and much of what the government now is doing to meet emergencies may revert to private initiative. Therefore, doctors at this particular time must plan judiciously, and act deliberately so as not to mislead the country into errors that would be regretted later.

I hope that, come what may, we will remember our traditions and do nothing to injure our heritage made so noble by generations of men who sought unselfishly to do the best they could to create better health for each succeeding generation of our people. I trust that we will keep in mind the simple, altruistic ideals that such men lived by—Osler, whose first ambition was to make of himself a good practitioner, doing the day's work well and not bothering too much about tomorrow; the Mayos, who believed that the crowning endeavor of a life in medicine was to aid in the development of medical education and research in order always to furnish better physicians and more knowledge with which to reduce illness; Peabody, who knew that the secret of the care of the patient was in caring for the patient. It is only by treasuring, besides old beliefs, the new knowledge and the fresh comprehension of freedom that medicine will acquire through the sacrifices and hazards of war that, as peace comes to the world, with it can come a new era of health.

EPHEDRINE SULFATE IN THE
TREATMENT OF NOCTURNAL
ENURESIS*W. E. KITTREDGE, M. D.†
and
HARRY G. BROWN, M. D.†
NEW ORLEANS

The treatment of enuresis in children has always presented a most annoying problem to medical practitioners. The multiplicity of methods suggested for its correction affords ample evidence that none, so far, has proved specific. The disorder is common and most distressing both to the patients' parents as well as to the patients themselves when they reach sufficient age to become conscious of the shame associated with "bed wetting." Ordinarily, nocturnal incontinence is not considered a pathologic condition until the child has passed the age of three, as it is well recognized that it sometimes takes that long for the child to develop the necessary nerve control of the bladder to enable it to sleep through the night without wetting. Until this control has been established, a child's bladder will respond to the stimulus which we know in adults as the first desire to void, wherein the parasympathetic or emptying nerves of the bladder activate the emptying reflex when only a comparatively small amount of urine is present in the bladder. As control is established, children learn to ignore this first impulse, thereby allowing the bladder to fill to full capacity before being further conscious of a desire to urinate. The normal person with normal bladder capacity and no irritating lesion present in the lower urinary tract is therefore continent for a period of eight or more hours at night.

At this point it is necessary to distinguish between functional enuresis and frequency of urination due to organic pathologic conditions. Any pathologic condition which causes a reduction in bladder

capacity, loss of sphincteric control with resulting incontinence, retention of urine with resulting overflow or irritation to the bladder itself or to the posterior urethra will cause a frequency of urination which will, of course, result in bed wetting at night. It is obvious, therefore, that before attempting to correct enuresis, all organic causes of frequency must first be eliminated. Should an organic pathologic condition be found, it is reasonable to assume that its correction will eliminate the undue frequency of urination. Diagnostic procedures which should be employed in every case to eliminate organic pathologic conditions include urinalysis particularly with regard to infection, kidney function tests, rectal palpation of the prostate and bladder, estimation of bladder capacity and roentgenograms of the spine to rule out spina bifida. The absence of organic pathologic conditions justifies the assumption that any given case of enuresis is based entirely on an imbalance of nerve control and the treatment should be predicated upon this assumption.

The nerve supply of the bladder involves a highly complex coordination of the sympathetic and parasympathetic nerves as well as voluntary control of the sphincter transmitted through the pudendal nerve. At the risk of over-simplifying the picture, it can be said that the sympathetic nerves are the filling nerves of the bladder in that they inhibit the detrusor muscle which makes up the bladder wall, and cause increased tone in the internal sphincter, thereby allowing the bladder to retain its contents. The parasympathetic nerves, on the other hand, are known as the emptying nerves of the bladder and stimulate the detrusor muscle to contract, simultaneously causing elevation of the trigone and relaxation of the internal sphincter. This is accompanied by voluntary relaxation of the powerful external sphincter by means of its cerebral control through the pudendal nerve.

Based upon these and other considerations, many highly ingenious methods of treatment have so far been suggested in

*Read before the Orleans Parish Medical Society, New Orleans, October 11, 1943.

†From the Section on Urology, Ochsner Clinic, New Orleans.

the management of enuresis. Child psychology has been employed, including threats and promises and the use of sugar pills. Mechanical methods have been used, such as withholding fluid intake in the latter part of each day, elevation of the foot of the bed, the use of collodian plugs in the urethra and high salt intake with the intention of withholding fluids from the urinary tract. Specific drug therapy designed to influence the nerve control of the bladder has included the use of at least 30 drugs, among which is atropine, undoubtedly the best standard drug used for this purpose up to this time. However, it is well known that the results with these and other measures have been indifferent.

Inasmuch as the use of sympathetic nerve stimulants has proved more promising, as exemplified by atropine, than mechanical or psychologic methods of treatment, it would be desirable to find a drug with a more powerful effect upon the sympathetic nerve supply. Ephedrine has been found to produce this effect. This drug was first described in 1925 by Chen,¹ who isolated the compound from a Chinese herb, *ma huang*. Its pharmacology has been described by many writers, including Learmonth,² Winter³ and others. In its role as a sympathetic stimulant, it activates the internal sphincter and inhibits the detrusor muscle through its stimulation of the presacral nerve. It has been demonstrated that in exstrophy of the bladder, it causes contraction of the trigone, relaxation of the fundus of the bladder and contraction of the ureteral orifices. According to Winter it also causes an increase in the urethral resistance and reduces bladder irritability with resultant increase in capacity.

In 1930 Parkhurst⁴ suggested the use of ephedrine in incontinence of urine because he noticed that when given to an asthmatic patient, it caused retention of the urine. In 1932 Balyeat and Rinkel⁵ reported a case of an asthmatic patient taking 25 mg. of ephedrine hydrochloride four times a day who had to be catheterized daily and who was unable to urinate spontaneously until thirty-six hours after the cessation of the

drug. Again in 1935, Valentine and Fitzgerald⁶ reported three cases of acute retention in patients with asthma who took ephedrine. It should be pointed out, however, that in all of these instances, the patients were in the prostatic age group and probably had some inherent difficulty in urination due to early prostatic enlargement upon which was superimposed the neurologic effect of the ephedrine, and that, therefore, young adults and females would not be similarly affected. In 1934 Christopherson and Broadbent⁷ used ephedrine to treat enuresis. They reported 12 cases, eight of which were controlled by the use of ephedrine, $\frac{1}{4}$ gr. daily, and four others which were controlled only by the combination of ephedrine and belladonna.

Our experience with the use of ephedrine in enuresis extends over a period of five years beginning in 1938. We first used it in a public institution for children where one of us in cooperation with the resident physician gave it to 25 chronic "bed wetters." Twenty-three of the 25 immediately became continent and remained so as long as the drug was administered. It was given in a single dose of $\frac{3}{4}$ gr. each night at bedtime and no other measures were taken to influence these patients' "bed wetting" habit. The drug was continued in each case for two weeks and then withdrawn. It was then noted that enuresis returned in 11 of the 23 cases; the other 12 have remained well. The two who were not influenced at any time were incorrigible children of low mentality. We were greatly encouraged by these results, inasmuch as these children had been treated earlier with many of the accepted methods by other staff physicians with indifferent results. Due to changes in personnel, however, this study was not followed up at this institution.

Since that time we have continued to use ephedrine in practically every case of enuresis which we have encountered both in private and public patients. Each case is first carefully studied to eliminate any organic pathologic conditions which might cause frequency of urination stimulating enuresis. Specifically, it is always neces-

sary to eliminate the possibility of infection in the urine, mechanical obstruction to the emptying of the bladder with resultant retention or any neurologic defect which would interfere with normal function of the bladder. The remaining cases can be classified as true functional enuresis. A single dose of ephedrine sulfate ($\frac{3}{4}$ gr.) at bed time has proved entirely satisfactory and it has been found that larger doses in cases of failure produce no additional benefit. In no instance has there been any unfavorable reaction from the drug. The length of time necessary for a course of treatment has varied somewhat. It is probably always necessary to give it for at least three weeks continuously, after which time it can be withdrawn and the results observed. If the habit returns, the drug can then be resumed for a second course of three weeks. In favorable cases the child ceases to wet the bed almost immediately, although he may miss one or two nights a week for the first two weeks. Once the proper habit has been established, the patient will usually remain continent at night thereafter.

Unfortunately, because of inadequate records it is impossible at this time to report in detail our results in many of these cases. It can be said, however, that in almost every instance, a favorable response was obtained at least as long as the patient took the drug. It should be remembered in this connection that most of these children had been treated by other means without benefit prior to our contact with them. We have often substituted sugar pills for ephedrine in an effort to determine what, if any, psychologic role the mere taking of a drug of any kind has played in these cases. In our experience there has been an almost universal relapse when sugar pills were used. We have noted a few failures which we have been unable to explain. As our experience has increased, we have learned that in some cases prolonged use of the drug either continuously or in separate courses may yield results after a surprisingly long time. One child took ephedrine each night for a month before any improvement was noted, after which time the habit

was completely overcome and he has remained well.

A few selected cases are reported in detail in order to illustrate certain phases of this problem.

CASE No. 1

J. D., white male, aged 9 years, was a well developed, healthy and intelligent child. He gave a history of enuresis from infancy; he had wet the bed practically every night and more recently had become greatly chagrined by this habit. He made a conscientious effort to avoid enuresis but was unable to control the bladder while sleeping. He had received varied treatment including belladonna, restriction of fluid intake, sugar pills, and psychotherapy without any noticeable improvement. Urologic studies all were negative. Ephedrine sulfate ($\frac{3}{4}$ gr.) was given each night. During the first week he wet the bed twice, once during the second week and at no time thereafter. He continued taking the drug for 21 days. One month later he wet the bed twice in one week, after which a second course of ephedrine was begun, during which time he never wet the bed. The drug was continued each night for three weeks. He has remained well during the ensuing three years.

Comment: This is a fairly typical case which illustrates what can be accomplished by the use of this drug.

CASE No. 2

C. C., white female, aged 10 years, a well developed and healthy child, gave a history of enuresis from infancy. She had had the usual childhood diseases. Urinalysis revealed no infection. Roentgenograms were normal. Bladder capacity was normal. Rectal dilatation and the instillation of 2 per cent silver nitrate in the urethra had been tried without noticeable benefit. When seen she was still wetting the bed four to five times a week. Ephedrine ($\frac{3}{4}$ gr.) was given each night. No improvement was noted the first week; the habit had greatly diminished the second week and she had complete control of the bladder by the third week. The drug was continued for a month. The habit returned as soon as the drug was withdrawn. It was, therefore, resumed and she became continent again. A sugar pill was substituted for ephedrine during the second week of her second course and during that week she wet the bed three times. Ephedrine was then continued for a total of a month. Since then she has wet the bed on an average of once a week. No further treatment has been given her as yet.

Comment: This case illustrates the fact that ephedrine can control bladder function as long as it is administered but that a

relapse can occur unless proper habits are established. Evidently this child's bladder has not formed a sufficiently well established habit to allow her to remain continent each night. Further treatment might accomplish this purpose.

CASE No. 3

M. H., white male, aged 3 years, was a healthy looking child who had had no previous illnesses. Enuresis existed from birth. He had not been previously treated. Urinalysis revealed no infection. The prostate was normal on palpation; the bladder capacity was normal and the x-rays of the spine negative. Ephedrine (3/4 gr.) was administered each night for a total of six weeks with no improvement whatever. The drug was discontinued at the end of that time and no additional treatment has been employed as yet.

Comment: This appears to be a healthy, normal intelligent child with no demonstrable organic pathologic condition in the urinary tract who has failed completely to respond to the use of ephedrine. We are unable to explain the reason for this.

CASE No. 4

J. R., white male, aged 23 years, gave a history of having been a "bed wetter" from birth. Many forms of treatment had been tried during childhood without effect, and as he grew up, further efforts were made to cure him. These included the use of drugs such as atropine, prostatic massages, instillations of silver nitrate in the posterior urethra, and other measures. None had any effect and he had become resigned to the inevitability of his condition. He had never been able to accept an invitation to sleep in any one else's home for fear of ruining their mattress. He had recently married and was most embarrassed by his habit of enuresis. Physical examination revealed a normal, healthy male. There was no infection in the urine, the bladder capacity was normal, the prostate negative for infection and roentgenograms of the spine were negative. The blood Wassermann was also negative. Ephedrine (3/4 gr.) was given each night at bed time. He wet the bed the first two nights but never since that time. The drug was continued for three weeks and he has had no relapse in the four years since he was first seen.

Comment: This represents an unusual situation in view of the patient's age, but it also strikingly illustrates the efficacy of ephedrine.

CASE No. 5

D. V., white female, aged 17 years, gave a history of enuresis from infancy. She had always been told that she had chronic kidney disease although it had never been investigated. Little effort had been made to correct her condition. She appeared to be a normal healthy girl, except that she was somewhat obese. Kidney function was normal, urinalysis negative for infection, and bladder capacity normal. Roentgenograms of the spine were negative. X-ray films of the urinary tract were entirely normal. Cystoscopy revealed normal bladder action and sphincteric control. She was given ephedrine (3/4 gr.) each night. During the first week she wet the bed once but never since that time. The drug was continued for three weeks and she has remained cured of the habit during the ensuing six months.

CASE No. 6

E. O., white male, aged 3 1/2 years, was a normal healthy boy with a history of enuresis from infancy. Various efforts had been made to cure him, including psychotherapy, withholding fluids, increased salt intake and the use of belladonna, all to no avail. Examination revealed a normal, healthy child. The urine was negative for infection. Roentgenograms were negative for neurologic lesions. The prostate was normal. Bladder capacity was normal. He was given ephedrine sulfate (3/4 gr.) each night for a month without improvement. At the end of that time the habit suddenly stopped. He took the drug for an additional three weeks and the habit did not return in the ensuing six months.

Comment: In this instance it is difficult to explain why the desired effect was delayed but this case demonstrates the importance of continuing the drug for at least a month, should the patient fail to improve immediately.

SUMMARY

The problem of enuresis in children has been discussed and the methods of treatment so far employed for its correction mentioned. The rationale for the use of sympathetic nerve stimulants has been explained and ephedrine sulfate has been suggested for this purpose. Our experience with the use of this drug is presented and cases are reported to illustrate the various results which have been obtained. The drug is recommended because of its ease of administration, absence of disagreeable reactions and excellent results. A detailed statistical analysis of our series of cases

will be reported at a later date in order to evaluate more exactly the efficiency of ephedrine sulfate in controlling enuresis.

REFERENCES

1. Chen, K. K.: Effect of ephedrine on experimental shock and hemorrhage, *J. Pharm. & Exper. Therap.*, 26:83, 1925.
2. Learmonth, J. R.: Contributions to neurophysiology of the urinary bladder in man, *Brain*, 54:147, 1931.
3. Winter, I. C.: Pharmacology of micturition. Effect of drugs on bladder and urethra with autonomic supply intact, *J. Urol.*, 46:952, 1941.
4. Parkhurst, L. E.: Nocturnal incontinence in children, (Correspondence), *Brit. M. J.*, 2:1103, 1930.
5. Balyeat, R. M., and Rinkel, H. J.: Urinary retention due to the use of ephedrine, *J. A. M. A.*, 98:1545, 1932.
6. Valentine, J. J., and Fitzgerald, J. S.: Retention of urine due to ephedrine with a discussion of the mode of action and a therapeutic usage, *J. Urol.*, 34:314, 1935.
7. Christopherson, J. B., and Broadbent, Marjorie: Ephedrine and pseudo-ephedrine in asthma, bronchial asthma and enuresis, *Brit. M. J.*, 1:978, 1934.

DISCUSSION

Dr. Roy E. de la Houssaye (New Orleans): I think we all owe Dr. Kittredge a vote of thanks for presenting something that we can all use, something that is practical, something not too scientific for all of us to understand, and also I want to thank him because this is the first time that the speaker has given me his paper to read over a few days ahead of time.

As far as I can make out in going back as far as 1929 on the subject of enuresis, the majority of physicians have come to the conclusion that enuresis is due to an unstable nervous system in the majority of children and even with all the old treatments like pituitrin and atropine, it seems that about 80 per cent get well. There are different treatments. Cook says he believes that in most cases it is purely a habit associated with other habits indicating unstable and highly susceptible nervous systems. Most medical centers now have an enuresis clinic and I might say I think it is a timely place. Dr. Kittredge has given us something else, but I have never used it. There are so many little details associated with the treatment that could be handled in an enuresis clinic. For instance, I might order one drug—Dr. So and So might order another. You might have the child sleep on its side, or raise the foot of the bed—so forth and so on—just to show how many tiny details that have to be brought out in the care of a child with enuresis.

Dr. Kittredge brought out about the psychology of the child. I know he left this open for me. It is not so much the psychology of the child as of the father and the mother. You take this day and time, we see so often a child who must drink a quart of milk a day, six, eight, or ten ounces of orange juice a day. He must do this and he is always being pounced upon to do something. I think if you could get the father and mother and

talk things over with them and get the child into a definite routine, that would help, along with the ephedrine sulfate that Dr. Kittredge has so aptly mentioned. In 1942 Gordon, in the *British Medical Journal*, made studies and brought out quite a few cases of patients who had asthma where ephedrine was used and they had difficulty in urinating. It seems there is a definite association between enuresis, stammering, and asthma. There is a neurological background in asthma—allergy.

One thing—most of us do not have sufficient urological examinations. Just because a child comes in with enuresis is no reason to send him to a urologist. We should check him up and, if he presents a problem and we have done everything we can, that child should definitely have a urological examination. I am guilty of not having as many urological examinations on as many of these children as I should have. We should certainly take that into consideration. You can restrict fluids, use a high protein diet. I have had excellent results with that and probably if I had used ephedrine would have even better. Give them eggs, beans, peas, salt herring—a protein diet—and restrict cereals and fruits.

Dr. Kittredge said that the early methods were treated with indifferent results. I think a great deal of these indifferent results are principally the indifference of the physician. We do not set out a very definite program for the family to follow in the treatment of enuresis. If we were to have a mimeographed sheet of instructions—if we have something definite and tangible—I think we would get better results. Most of them have been pretty good. I want to say that there is one doctor who used ephedrine in 1937. Brookfield reported 30 cases of enuresis treated with ephedrine sulfate. Ten were cured, an improvement noted in 14, and the rest of them were rather indifferent and did not get along well.

I have found in using ephedrine sulfate that in children it makes them highly nervous. If 3/8 of a grain of ephedrine sulfate is given to a three or four year old child he gets quite jittery if you do not give some sedation along with it. It is so easy to administer that I hope to use it.

Dr. Henry D. Ogden (New Orleans): I am certain this method of treatment is going to be helpful. Epinephrine has also been used in the past. Both drugs are sympathicometic in action, ephedrine being usually longer in duration. I would like to give a little light on some of these functional cases that Dr. Kittredge has mentioned. Remembering that the allergic mechanism consists primarily of an overstimulation of the parasympathetic nervous system, studies from the standpoint of sensitization were made by Bray in 1934. Three types of enuresis are found in association with allergy.

First—enuresis definitely associated with an outstanding allergic disorder such as asthma, hay fever, or dermatitis. He was able to give relief

by proper diagnosis and avoidance of the offending allergen.

In the second group typical allergic manifestations are not present, but certain relationships indicate the assumption that the cases are of allergic origin. For instance, the enuresis may only appear during a certain pollen season, or when there is an upper respiratory infection with bacterial allergy.

The third group is that group of cases in which enuresis apparently exists with no other allergic symptom or relationship, and the diagnosis is only made by skin tests and careful study.

Therefore the suggestion should be made that in some of these functional cases such a disturbance of the parasympathetic system might be due to an allergy. Ephedrine would tend to counteract these allergic reactions. I would like to ask Dr. Kittredge if he noticed allergic manifestations in any of the children treated by him.

Dr. Clyde Brooks (New Orleans): I want to point out the pharmacologic status of ephedrine. Ephedrine is effective in the cure of enuresis. In those cases which do not respond to ephedrine, some other similar drug might be tried. They all act similarly on sympathetic and parasympathetic nervous systems.

Dr. Philip M. Tiller (New Orleans): Do you give the same quantity to a three-year-old as you do to a 23-year-old person?

Dr. Kittredge (in closing): The question has been asked as to whether any adverse reactions have occurred in our experience with the use of ephedrine in enuresis. I want to say that we anticipated that at least some of these patients would have nervousness and wakefulness as a disagreeable side-effect of the use of ephedrine. We warned the mothers of this possibility. So far, none have complained.

In connection with wakefulness, I might add that at one time we also tried benzedrine sulfate on the theory that this drug would cause some wakefulness and lightness of sleeping thereby enabling these children to be aware of a full bladder so that they might go to the bathroom during the night and not urinate in bed. In our hands this did not prove of any value, although the drug itself did cause some nervousness, and fretfulness.

As far as dosage is concerned, we started using ephedrine in doses of $\frac{3}{8}$ grain, particularly in the smaller and younger children, reserving the $\frac{3}{4}$ grain dose for only the larger children. Later on we began using $\frac{3}{4}$ grain on all the children, regardless of age and having had no adverse reaction to this, we have continued to use it on all patients.

As regards the case of the 23-year-old man, I wish to point out that this patient had daytime

frequency as well as enuresis and that at the onset of his treatment we gave him ephedrine $\frac{3}{4}$ grain three times a day with the intention of reducing his day frequency, as well as his enuresis. He improved so rapidly that soon we left off the daytime doses and instructed him only to take the single dose at night and he had no further trouble.

ADENOMYOMA OF THE GALLBLADDER

(CASE REPORT OF MULTIPLE PAPILLARY ADENOMYOMA IN A 15 YEAR OLD BOY)

GORDON MCHARDY, M. D.†

AND

DONOVAN BROWNE, M. D.†

New Orleans

Benign neoplasia of the gallbladder, statistically, is less frequent than primary malignancy of this structure; the rarity of the latter is readily accepted. This statement in its entirety, however, demands the further support of proper classification of benign tumors with the elimination of the pseudo-neoplasms for its confirmatory justification. Papillomas are found in approximately 8 per cent of surgically removed gallbladders. Their occurrence is deemed unimportant and with exclusion from the true neoplasias, the situation changes and benign tumors represent only .07 per cent as illustrated in Wellbrock's¹ study. McCarty,² Phillips,³ and Graham⁴ with his associates, in agreement, consider papillomas merely hypertrophied villi related to cholecystic disease, the result of inflammatory change, cholesterosis or a combination of the two, and therefore are not properly neoplasia.

Differentiation has been suggested but not specified; even distinguished pathologic texts on neoplasia offer no classification. From the work of others we offer this compilation:

Benign Tumors

1. True neoplasia which may be single or multiple, cystic, papillary, and semi-solid

†From the Department of Medicine, Tulane University School of Medicine, and the Gastroenterology Clinic of Touro Infirmary, New Orleans, Louisiana.

- a. Myoma
 - b. Fibroma
 - c. Lipoma
 - d. Myxoma
 - e. Neurofibroma
 - f. Amputation neuroma
 - g. Adenomyoma
 - h. Other mixed tumors
2. Pseudo-Neoplasms
- a. Intramural calculosis
 - b. Papillomas "cholecystitis catarrhalis papillomatosa"

Adenomyoma, a mixed tumor, has excited considerable publication and has been reported under various descriptive terms. Robson⁵ and Wellbrock¹ termed it adenoma, Hromeda⁶ preferred myoma, King and MacCallum⁷ coined cholecystitis glandularis proliferans, Kordenat⁸ and Shambaugh⁹ described it cystadenoma, to mention only some contributors. The more acceptable title, adenomyoma, was offered by Nicod¹⁰ and by Eiserth;¹¹ this is the most accurately descriptive designation for the apparent reasons enumerated by Shepard¹² and his associates.

The incidence of adenomyomas varies from the minimal report of two in 4500 consecutive necropsy studies by Russo and Angrist¹³ to the 9.5 per cent of King and MacCallum⁷ in a study of surgical pathology. Shepard¹² and his associates at Mayo Clinic found an incidence of one in every one hundred cases of cholecystectomy. There is no apparent sexual relationship, although the Mayo Clinic study showed 75 per cent in females. The average age approximates the fifth decade with variations from 22 to 70 years of age reported. We could find no case report of occurrence in adolescence or infancy despite Nicod's¹⁰ statement they are found "at almost all ages."

Etiologically the hypotheses vary from congenital origin, through inflammation and infection in the gallbladder, to the trauma of cholelithiasis. Much has been stated on each aspect of the issue. Abell,¹⁴ and Kordenot,⁸ Ribbert,¹⁵ and others favored the congenital source as exemplified by Cohnheim's theories; there are many other

explanations lacking any greater substantiation. King and MacCallum⁷ are among those favoring metaplasia resulting from inflammatory or other stimulation.

Adenomyomas as we know them best are those of the uterus; at this site they represent the usual structure of the muscle tissue containing glandular alveoli. The development of the glandular element varies from a few isolated acini to large epithelial lined cystic tumors and may predominate over the muscular elements to form polypoid processes. This description is closely applicable to the occurrence of adenomyoma of the gallbladder and justify the subclassification into single, multiple, cystic, papillary, and semi-solid depending on the degree of preponderance of one of the two component elements. This aspect has been overlooked by many authors who limit their description to solitary cystic adenomyomas.

Symptomatically these lesions are silent. It is conceivable that they might by themselves or by virtue of concomitant cholelithiasis cause biliary manifestations suggestive of chronic cholecystitis with or without cholelithiasis.

Diagnostically there is the academically remarkable roentgenologic accomplishment of Kirklin¹⁶ in diagnosing 51 cases on cholecystography. The finding of increased dye concentration by Caylor and Bollman⁷ is considered significant. It is, therefore, more than conceivable from the work of Kirklin,¹⁶ Hefke,¹⁸ and Moore¹⁹ that a pre-surgical diagnosis is possible by an unusually suspicious roentgenologist. Kirklin,¹⁶ Caylor and Bollman,¹⁷ and Shepard¹² have evaluated the findings:

1. A more radiolucent defect in the dye filled gallbladder than with a calculus.
2. A small marginal defect best seen in tangential views and in a twenty-four hour film.
3. The defect is usually single. When multiple they are discrete.
4. The involved gallbladder may be a better dye concentrator resulting in a denser than normal gallbladder shadow.

Most diagnoses, of course, are achievable only by pathologic study of the gallbladder

removed because of definite manifestations of biliary disease.

Complications include intramural abscesses which may rupture into the peritoneal cavity and produce peritonitis. Concretions in the cysts may conceivably result in intramural calculosis. Cystic duct obstruction is a possibility. That a separated portion of a tumor may serve as a nidus for a stone is a long lived theory. Malignant potentiality is possible.

The treatment is obviously surgical.

COMMENT

It is pertinent in this case report that the age of the patient, 15 years, with the history justifying the assumption that the pathology existed at the age of 8 years, renders this incident the more unusual. The papillary type of adenomyoma and multiplicity both magnify the rarity of the lesion. It may be suggested that the disregard for the possibility of cholecystic disease in youth may be responsible for incurable pathology in adults admonishing us adequately to explain biliary symptoms in youthful patients.

CASE REPORT

F. L., a 15 year old student, was admitted to Touro Infirmary on February 18, 1943, with localized biliary pain of seven years' duration, with its onset coincident with an episode diagnosed as acute appendicitis. An appendectomy was done. The surgeon reported the appendix adhered in an inflammatory mass occupying the subhepatic region and attached to the gallbladder. The gallbladder was palpably firm, suggesting cholelithiasis to the explorer's fingers. Postoperatively the patient was icteric. Intermittently over the period of seven years there were episodes suggestive of biliary colic with nausea and vomiting and periods of disability of seven to ten days' duration. There was no further jaundice. The history was otherwise irrelevant.

Physical examination revealed an asthenic, anemic adolescent male in whom a bradycardia and apparently functional systolic mitral murmur were incidental findings. There was localized acute biliary tenderness with a sharp palpably firm hepatic margin.

The only significant laboratory finding was a hypochromic, microcytic anemia.

Roentgenologic study revealed normal findings on a G. I. series. Cholecystography failed to reveal any evidence of cholecystic function.

Peritoneoscopy was inconclusive. There were dense adhesions in the right upper quadrant of



FIGURE 1

Photomicrograph revealing the typical papillary type of adenomyoma with cystic changes.

the peritoneal cavity which partially nullified the value of the procedure. The liver appeared normal. A small, white, apparently rigid, gallbladder was seen. Palpation through the instrument gave the sensation of solidity.

Surgical intervention was elected. Dr. J. D. Rives, on exploratory operation, released dense adhesions to enter the biliary region, dissecting free a contracted, white, firm gallbladder. There were no demonstrable calculi. The common duct was greatly distended with bile. After aspiration



FIGURE 2

The gross specimen showing the lumen a complete mass of papillary growths.

the common duct was explored; no calculi were found and bougies were passed through into the duodenum without difficulty. A cholecystectomy was performed.

The gross specimen showed a pinkish-grey serosal surface with a smooth, glistening, firm area at the fundus measuring 1.5 cm. in diameter. The wall was 6 mm. thick. The mucosal surface was rough, pinkish-red and was covered in its entirety by papillary projections as seen in the illustration. One large nodular mass 2 cm. x 1 cm. represented the area viewed externally; this was studded with small grayish nodules 3 mm. in diameter. (Fig. 1).

The microscopic findings were those of papillary adenomyoma. (Fig. 2).

SUMMARY

1. A brief summarization of our knowledge on primary benign cholecystic neoplasms is presented.

2. Adenomyoma of the gallbladder are discussed.

3. An unusual incident of multiple papillary adenomyoma of the gallbladder is reported.

REFERENCES

1. Wellbrock, W. L. A.: The occurrence and possible significance of adenoma of the gallbladder, *Am. J. Surg.*, 23:358, 1934.
2. McCarty, W. C.: *Diseases of the Gall Bladder and Bile Ducts*, W. B. Saunders Co., Philadelphia, pp. 77-94, 1940.
3. Phillips, J. R.: Papilloma of the gallbladder, *Am. J. Surg.*, 21:38, 1933.
4. Graham, E. A. et al.: *Diseases of the Gall Bladder and Bile Ducts*, Lea and Febiger, Philadelphia, pp. 184-190, 1928.
5. Robson, A. W. M.: Adenoma of the gallbladder, *Med. Chir. Tr.*, London, 88:229, 1905.
6. Hromeda cited by Shepard (12).
7. King, E. S. J., and MacCallum, P.: Cholecystitis glandulosa proliferans, *Brit. J. Surg.*, 19:310, 1931.
8. Kordenat, R. A.: Cystadenoma of the gallbladder, *Wisconsin M. J.*, 29:634, 1930.
9. Shambaugh, P.: Multilocular papillary cystadenoma of the gallbladder, *Am. J. Surg.*, 22:229, 1933.
10. Nicod, J. cited by Shepard (12).
11. Eiserth, P. cited by Shepard (12).
12. Shepard, V. D., Walters, W., Dockerty, M. B.: Benign neoplasms of the gallbladder, *Arch. Surg.*, 45:1, 1942.
13. Russo, C., and Angrist, A.: Five years of gallbladder disease in a general hospital, *Am. J. Surg.*, 58:398, 1942.
14. Abell, I.: Papilloma and adenoma of gallbladder, *Ann. Surg.*, 77:276, 1923.
15. Ribbert cited by Kordenat (8).

16. Kirklin, B. R.: Cholecystographic diagnosis of neoplasms of the gallbladder, *Am. J. Roentgenol.*, 29:1, 1938.
17. Caylor, H. D., and Bollman, J. L.: The bilirubin of gallbladder bile in cholecystic disease, *Arch. Path. & Lab. Med.*, 3:993, 1927.
18. Helke, H. W. cited by Shepard (12).
19. Moore, C.: Cholecystographic diagnosis of papillomas and tumors of gallbladder, *Am. J. Roentgenol.*, 33:630, 1935.

—0—

THE INCIDENCE OF PEPTIC ULCER*

MARCEL PATTERSON, M. D.
SAN FRANCISCO, CAL.

Anyone who lives in America and listens to his radio or reads the current advertisements, or even the roadside signs, must certainly be well aware of the fact that dyspepsia is one of the most common complaints of our countrymen; nor is this a problem limited to these shores, for in a recent British publication, the statement was made that a firm of retail chemists who owned about a dozen shops in an industrial area sells a half ton of alkaline powders to their customers per month.¹² Yet when one attempts to analyze the data of various authors on the incidence of the different causes of dyspepsia, particularly peptic ulcers, one is struck with the extreme lack of agreement. This observation has been made by several reviewers and the explanation is given that geographic conditions and lack of uniformity of method used in conducting such surveys are two important factors in these discrepancies.^{26a} It has been said that one can prove anything with statistics and in a problem such as peptic ulcer where the etiology is as much an unsettled problem as malignancy, it is not surprising to find that many authors, in an attempt to add evidence to their pet idea, have added to the general confusion by refusing to compare their findings with controls or overlooking embarrassing comparisons.

Regardless of the fact that the question of incidence is very unsettled, the importance of peptic ulcer is no less belittled. One of the most striking statements ever

*It is to be regretted that on account of the length of this paper it was necessary to delete six valuable and well prepared charts.

made in regard to its importance is that by Smithie in May of 1928. He said, speaking before a group of clinicians, "... Assuming that in the United States at present there are sixty million individuals at or past adolescence, two million two hundred thousand of them now harbor or at some time will be affected with peptic ulcer. If all of these are treated surgically, there will be an operative mortality of 7 per cent (154,000 will die from operation). Of those with only one operation there will remain a digestive morbidity in 39 per cent, or 579,000. Following successful (?) surgery, 46,000 will come to at least one second operation."⁸¹

In considering what should be acceptable as statistical data it becomes necessary to review briefly the history of the recognition of peptic ulcer. Most writers give Cruveilhier credit for first establishing the anatomic characteristics, complications, and clinical features of chronic ulcer, but Hurst states that in 1828 John Abercrombie of Edinburgh gave a splendid account of the symptoms of gastric ulcer and this preceded Cruveilhier's work by several years. It was almost forty years later that Krause, in 1865, presented the first complete discussion of duodenal ulcer.¹⁵ It appears that Krause's work was almost totally forgotten for in the early days of the twentieth century it was still universally taught that duodenal ulcer was a rare condition and most writers limited their observation to gastric ulcers, considering them twenty times as frequent as duodenal. In 1901 and 1905 when Moynihan published the results of his surgical experiences, interest again became lively, and at the same time the direct objective method of roentgen ray and gastroscopy was going through the process of development.³⁸ Haudek, in 1910, described the niche of gastric ulcer, and Cole in 1914 clearly established the significance of the deformity and the crater of duodenal ulcer. The classic book by Carman and Miller on "The Roentgen Diagnosis of Diseases of the Alimentary Canal," appeared in 1917, but nevertheless was not widely used. In the past two and a half

decades an amazing transformation has occurred. Gastrointestinal roentgen ray examination, particularly the mucosal relief technic under the influence of Abbeelund (1921) and Berg (1930), has been perfected to such a degree that now even very small ulcer craters may be demonstrated with an amazingly high degree of accuracy and with a frequency undreamed of in the years before the first World War. Modern gastroscopy was developed and perfected during this period by Schindler, using first the rigid gastroscope and later, in 1932, devising the flexible instrument now in use. And so today the diagnosis of gastroduodenal disease can be made by rather precise objective methods, whereas the observers in the last century and the early part of the present one had to rely on clinical deduction.⁵⁷ Consequently it must seem obvious that when one considers the incidence of ulcers in the early twentieth and late nineteenth century based on clinical impressions, the results are naturally inaccurate, while the discrepancies based on autopsy figures may be explained perhaps by the fact that pathologists were not "duodenum conscious" or that there actually has been a change in the essential pathology of peptic ulcer. The former seems more likely to me.

FREQUENCY OF PEPTIC ULCER

To give some idea of the significance of geographic distribution and also to indicate the problem that one faces in determining the incidence of peptic ulcer the following statistics are given. They are taken from two articles, one which appeared in the *Archives of Internal Medicine* in 1926, written by Sturtevant and Shapiro,⁷⁰ and the other by Gordon and Manning which appeared in the *American Journal of Medical Science* in 1941.^{26a} (See table 1.)

A quick glance at the percentages in table 1 will reveal that there is a range from 0.5 per cent to 20 per cent and consequently little or nothing can be estimated in regard to the incidence of peptic ulcer. If we ignore all statistics prior to 1913, limiting ourselves to the United States alone, we are

TABLE 1

Author	Year	Place	No. Cases	Per-centage Ulcers
Von Jahsch	1855	.....	.....	4.8
Brinton	1859	London	.....	5.00
Leuke	1871	Germany	13,605	4.80
Ziemssen	1871	Leipzig	.....	4.55
Lebert	1876	Germany	200	.5
Grunfeld	1882	Europe	.....	20.00
Berthold	1883	Germany	.....	2.7
Welch	1894	U.S.A.	32,052	5.00
Nolte	1900	Germany	.....	1.25
Fenwick	1900	U.S.A.	47,912	4.2
Riegel	1905	.....	.....	20.00
Dreschfeld	1907	Baltimore	1,000	5.00
Stahl	1907	Germany	.....	2.16
Dietrich	1912	.....	.....	1.5
Lockwood	1913	U.S.A.	19,315	1.23
Bassler	1926	U.S.A.	59,450	4.4
Sturtevant and Shapiro..	1926	N. Y. City	7,700	2.11
Multer	1934	U.S.A.	.....	2.11
Portis and Jaffé	1937	Chicago	.....	4.90
Gordon and Manning.....	1941	Philadelphia	22,956	3.10

still faced with a variation from 1.23 per cent to the high incidence of 4.9 per cent in Chicago. Therefore to alleviate confusion and to attempt to get some definite ideas about what one might expect in various parts of the world, the attempt will be made to discuss incidence as it occurs in various countries. In some instances it was not feasible, or was impossible, to obtain statistics, and personal opinions based upon clinical experience had to be relied upon

rather than autopsy or proved clinical diagnostic material.

AMERICA

“There seems little doubt that digestive disturbances, particularly those due to peptic ulcer, have increased enormously during the past 20 years.” This statement was made by Graham and Kerr^{26b} in the British Medical Journal in March of last year. The evidence of this being true in England is not as marked as in America, but at least in two places in this country, New York and Philadelphia, the evidence is rather striking (chart 1). Hinton in 1933, reviewing the protocols and case histories at the Bellevue Hospital in New York City from 1910 to 1931 found, though there were yearly fluctuations, that there had been a gradual rise from 0.09 per cent to 0.66 per cent of the total admissions with a diagnosis of peptic ulcer. It is interesting to note that the barium meal for gastrointestinal study was introduced in Bellevue Hospital by Hirsh in 1910. This author also showed that the incidence of perforation and hemorrhage increased proportionately so that it is convincing that this rise is actual rather than relative.³³

Gordon and Manning, in reviewing protocols at the Philadelphia General Hospital, found that from 1921 to 1937 there had been a rise from 2.35 per cent to 4.15 per cent of total autopsy material that showed some evidence of peptic ulceration^{26a} (see chart 1). Examination of the two statistical studies reveals rather marked differences in yearly variations, yet both show that peptic ulcer is apparently on the increase. It is unfair to say that one man’s results are inaccurate because they do not compare with another favorably, for it must be again emphasized that Hinton was working with patients who had been diagnosed clinically, and it must be remembered that many patients suffer with ulcer who do not consider their symptoms severe enough to bring them to a doctor.²³

DeBakey and Odom, in a study of admissions in Charity Hospital at New Orleans from 1929 to 1938, found an increase from 0.0444 per cent per 100,000 admissions to



0.0614 per cent per 100,000 admissions, that is to say an increase in incidence one and a half times while the incidence of perforation increased approximately seven times.⁵⁵

In table 2 it will be noted that the various incidence of peptic ulcer as found by different observers in America is given. Only the more recent observations are considered, since we are primarily interested in the incidence of ulcer as we expect to find it today, and from the previous discussion it may be well assumed that ulcer is more common in this country than in previous years.

I have attempted to arrange these statistics according to the type of material the author was using, that is to say, autopsy, roentgen ray, or per cent of general admissions. It seems only obvious that the investigator who quotes findings on the number of ulcers he has found according to the number of gastrointestinal roentgen ray

studies he has made will have a higher percentage of occurrence than the man who quotes statistics on numbers of cases per general admissions. We must certainly assume that if the trouble were taken to run a gastrointestinal series on a patient, that he had either a complaint of dyspepsia or the examiner felt that it was indicated. It is also common clinical experience that every patient admitted to a general hospital with dyspepsia as an incidental finding, is not examined for ulcer. A consideration of these factors will help to clarify some of the apparent discrepancies among reporters.

Classifying the statistics in table 2 into three groups, it is found that among 41,827 cases examined at autopsy, there was an average incidence of 5.5 per cent peptic ulcerations. The high incidence found by Robertson and Hargis might be explained by the fact that these men were making an anatomic study and were particularly care-

TABLE 2

AUTHOR	TYPE	CASES	NO. YEARS	PERCENTAGE ULCERS	PLACE
Portis & Jaffé	Autopsy	9,171	1929-36	5.	Cook Co. Hospital Chicago
Robertson & Hargis	Autopsy	2,000	1925	11.85 (duodenal)	
Gordon & Manning	Autopsy	22,956	1941	3.10	Philadelphia Genl. Hospital
Sturtevant & Shapiro	Autopsy	7,700	1926	2.1	Bellevue, N. Y.
Dwyer & Blackford	X-ray	3,000	1930	15.	?
Eusterman & Balfour	Roentgen ray	15,985	1935	13.2	Mayo Clinic
McMullen	Roentgen ray	4,400	1941	20.	Colorado Genl. Hospital, Denver
Muller	Clinical	176,000 Genl. Adm.	1934	.94	Henry Ford Hospital
Boland	Clinical	135,000 Genl. Adm.	1925-34	.68	Grady Hospital Atlanta
Steigman	Clinical	67,831 Genl. Adm.	1934	.88	Cook Co. Hospital Chicago
Blackford & Cole	Clinical	?	1939	1.5	Seattle
Odom & DeBaKey	Clinical	100,000 Genl. Adm.	1938	.06	Charity Hospital New Orleans
Hinton	Clinical	48,293 Genl. Adm.	1926	.54	Bellevue, N. Y.
	Clinical	63,837 Genl. Adm.	1936	.66	Bellevue, N. Y.
Jennison	Clinical	14,000 Group of Employees	1927-36	1.4	Metropolitan Life Ins. Co.

ful in looking for, not only active lesions, but healed scars which they added to their series. It is interesting to note that in those patients with duodenal scars only 38 per cent had been diagnosed as ulcer patients and 62 per cent had few or no symptoms. This will perhaps explain the low average percentage of 0.73 incidence of peptic ulcer among general admissions. I am unable to explain the low percentage of peptic ulcers as given by Odom and DeBailey at Charity Hospital, New Orleans. Among 20,385 patients examined roentgenologically there is an average incidence of 16 per cent, and according to Drossner and Miller the roentgen ray diagnosis in 80 proved cases of ulcer was 92 per cent correct.²⁰ Assuming that this statement is universally correct, which is doubtful because one must depend upon variously trained radiologists and clinicians, the incidence of peptic ulcer in this group would be 18 per cent, probably higher.

From this maze of statistics there are certain conclusions which seem to me to be forthcoming. The first is that apparently only a very small percentage of patients admitted to hospitals in America with a peptic ulcer are diagnosed as such. There may be several reasons for this. Peptic ulcers, particularly duodenal ulcers, are notorious for their chronicity and their ability to wax and wane as far as symptoms go. From Robertson and Hargis' findings^{63b} and from other clinicians' opinions,³⁸ we must assume that many ulcers do not give any symptoms or else heal before the patient has considered it important enough to go to the doctor. This is especially true of the acute ulcers. Secondly, that among those patients for whom roentgen examination of the stomach and duodenum appeared necessary the incidence is rather high; and thirdly, that the incidence of peptic ulcer in America is extremely variable, depending upon what year the statistics were taken, what part of the country they are from, and what method was used by the author in his report. Perhaps when Palmer, speaking at the Ninety-third Annual Session of the American Medical Association, made the statement that

studies indicate that peptic ulcer occurs at some time in at least 12 per cent of all adults, he came as close to the actual incidence of peptic ulcer in America as anyone ever has.⁵⁷

GREAT BRITAIN

Before World War I, Rutimeyer, in writing a paper on the geographic distribution of peptic ulcer in necropsy material in various countries, stated that in England the incidence was 5 per cent.^{60b} The same figure is quoted by Kemp⁴¹ in his book, "Diseases of the Stomach" published in 1910, and by Brinton¹⁰ in 1865. One of the most thorough and more recent studies is that done by Hurst and Stewart³⁸ when in a study of some 4,000 consecutive autopsies done at Leeds General Infirmary prior to 1935, they found an incidence of 9.55 per cent of peptic ulcer and came to the conclusion "that it may therefore be assumed that about 10 per cent of all individuals suffer at some time in their life from a chronic gastric or duodenal ulcer." McCrae, in an article appearing in 1938, gives the incidence of peptic ulcer in London as 4.2 per cent, but his statistics are low in regard to the United States which he gives as 1.2 per cent.³²

It would appear therefore that the incidence of peptic ulcer as far as America and England are concerned is much the same.

EUROPE

According to Rutimeyer the geographic incidence of peptic ulcer in necropsy material in Europe is as follows: 4 per cent in Austria, Bohemia, and Poland; 16.7 per cent in Denmark; 5 per cent in Germany; .8 per cent in Russia; and 2.6 per cent in Switzerland. This work appeared in 1906^{60b}

Hart (1918) and his assistants, Musa and Holzweissig (1922), investigating cases in Germany in a seven-year period preceding 1921, found after thoroughly examining the stomach and duodenum for ulcers and scars, an incidence of 6.1 per cent of peptic ulcer among 3,058 autopsies.³⁸ Friedenwald,³² reporting in 1926, stated that the incidence of gastric ulcer in Central Europe is 0.54 per cent to 3 per cent.

A statistical study from the University of Mauberg in August, 1940, revealed that out of 5,048 patients who came to the clinic complaining of dyspepsia, roentgenographic study revealed an incidence of 24.8 per cent.⁵⁰ But Hans May remarked after travelling in Europe, "There is a difference in the behavior of peptic ulcer in various countries. While in Frieburg-in-Baden the number of patients treated at the University Hospital for peptic ulcer was comparatively low, yet the number of such patients admitted to the University Hospital at Munich (200 miles away) was strikingly high, nearly ten times higher than in Frieburg. I have observed that in Philadelphia with the exception of perforation, the incidence is as high as in Munich. . . ."

In regard to the rest of Europe one finds a large number of variable incidences. Professor Donati, University of Turin, Italy, found ulcer lesions in only 2.22 per cent of his autopsy material. Keen's surgery states that in 6,000 postmortems in St. Petersburg only two cases were noted for peptic ulcer. In Marion Magdalen Hospital, St. Petersburg, with a yearly admission of 3,500 not a single case of peptic ulcer was seen. Hamperal found in a study of peptic ulcer in Russia before 1918 an incidence ranging from 0.5 to 1 per cent.⁵² In the literature reviewed for this paper, not a single reference to the incidence of peptic ulcer in France was found though no attempt was made to read any of the French literature. It seems strange that, considering the number of articles that have been written on geographic distribution of ulcer, that no reference is made to France, Spain, or the Scandinavian countries.

Muller⁵² concluded at the end of his paper on geographic distribution of ulcer that "the incidence of peptic ulcer lesions varies not only from country to country but may vary in the same locality" and this discussion in regard to the incidence of peptic ulcer in Europe is merely a gesture to give some idea of the variability. Many attempts have been made to explain this but so far it has remained as much an enigma as it was to Ewald²⁴ in 1902 when he advocated the

possibility that in those places where ulcer was rare, the inhabitants were vegetarians and due to the increased potassium in the diet, were immune to the ulcer.

INDIA

Major E. Hingston, I.M.S. in 1927 expressed the belief that peptic ulcers are most common in southern India, less common in Bengal and least common in the region adjacent to the foothills of the Himalayas. Recently (1940) there has appeared in the Indian Journal of Medical Research, a series of articles on peptic ulcer in India. They were the results of a study of statistics from 5,674 hospitals all over India, and the conclusion was that disease of the stomach and duodenum are common in India, constituting 2 to 4 per cent of the total attendance at the hospitals and dispensaries. 1939 figures which included all sources showed an incidence of 690 to 3,320 per 100,000 population. It was Hingston's opinion that peptic ulcer is fifteen times more common in southern than in northern India and he believed that this was due to the high carbohydrate and low protein diet eaten by the southern Indian.¹⁷ Many authors agree that gastric carcinoma is rare in Indian hospitals.^{52,61}

CHINA

Professor D. S. Robertson, Mukden Medical College (1929), after making an extensive survey, came to the conclusion that ulcer was not only common in China but also in Korea, Formosa, and in fact, all over the Far East. He commented on the superficiality of the lesions, lesions which heal kindly under medical régime and seldom require surgical intervention.⁵²

NETHERLAND EAST INDIES

The striking difference in frequency of peptic ulcer and gastric carcinoma between the Malays (natives) and the Chinese in Java and Sumatra is known and confirmed by every pathologist of the Netherland East Indies. In the Malay race the incidence is extremely low whereas among the Chinese living in towns and villages of these islands the frequency is more or less the same as in the Western world. For example, in a

study of 951 autopsies among the Chinese, there was an average incidence of 2.26 per cent of peptic ulcer, while in the Javanese, 2,512 autopsies were performed with an incidence of 0.4 per cent.⁷ Further examples of this variation among the various races is shown by the work of Kouwenaar in 1930 at the rubber plantation of Deli in Java. In 2,173 autopsies he found among the Chinese an incidence of 10.10 per cent; among the Klingen (Indian coolies) an incidence of 5.6 per cent; and among the Javanese an incidence of 0.97 per cent.⁵²

MEXICO

A study of mortality statistics by Fredrich L. Hoffmann of the Prudential Life Insurance Co. revealed that peptic ulcer was not a prevalent disease in Mexico. His statistics were taken from the states of Merida, Vera Cruz, Guadalajara, Ixtlan, Salina Cruz and Tehuantepec. Hartman³¹ states, "... while in Mexico for two months, six years ago, I endeavored to elicit a history of ulcer among the Indians but failed. Mantano, of the Department of Health in Mexico, verified this observation when he recently told me that the idea was prevalent among Mexican physicians that Indians rarely had ulcer. In a series of four hundred patients with histories like peptic ulcer not a single case could be demonstrated by roentgen ray."

WEST INDIES AND PANAMA

Clark (1914) reporting on a series of necropsies in the Panama Canal Zone, reported a total incidence of peptic ulcer of 4.5 per cent. In dividing this up among the various race groups there was an incidence of 5.39 per cent among West Indians, 2.8 per cent among Latin American, and 2 per cent among the white population.^{60b}

Statistics taken from the medical department of the United Fruit Co. revealed that among white people admitted to the hospital there were only seven diagnosed (five gastric and two duodenal) peptic ulcers among 5,038 admissions, or one in every 720, while among the 128,861 colored and natives dependent upon the hospitals there were 16 gastric and four duodenal ulcers with no

deaths, an incidence of one in every 6,443 natives and negroes.⁵²

In the annual report of the Health Department of the Canal Zone in 1930, there were only 53 cases of peptic ulcer among 7,824 white admissions and only 17 peptic ulcers among 7,168 colored admissions.⁵²

ARGENTINA

Professor Fernando Ruiz, University of Rosario, reporting on 1,041 autopsies performed from January 1, 1922, to July 1, 1927, found only thirty lesions of peptic ulcer, an incidence of a little less than 3 per cent.^{60b}

AUSTRALIA

Frank L. Apperly, in studying the incidence of peptic ulcer in Australia, found that the highest percentage was among the public hospitals of Tasmania where there were 135 ulcers to every 1000 beds, while in West Australia the incidence was lowest with 50 cases to every 1000 beds, or in other words, a variation from 13.5 per cent to 5 per cent.⁵² These reports agree rather closely with those of Wright-Smith⁸² who found in 4,085 consecutive autopsies at the Royal Melbourne Hospital performed from 1927 to 1936, an incidence of 5.3 per cent of peptic ulcer.

AFRICA

The question of peptic ulcer in Africa has been left to the end of this discussion because I wish to correlate the incidence as found among the native negroes of Africa and those of America.

Stuart Bergsma, working in Addis Ababa in a hospital for two years, observed over 20 cases among the blacks. Curiously enough, among the 5,000 Caucasians he failed to find a single case of ulcer. It was his belief that the high ulcer incidence was due to the strong condiments the natives ate. Except in Abyssinia, the incidence of peptic ulcer does not seem to be remarkable in Africa. Eagle and Gillman at Johannesburg Non-European Hospital, found only four cases of peptic ulcer in 18,000 hospital inmates. A combination of these statistics with ones taken from the Government Mortuary revealed that in a total of 15,298 au-

topsies, there was an incidence of 0.9 per cent among Europeans, 0.476 per cent among Eurafricans, and 0.137 per cent among the Bantus (natives of South Africa).²¹ Among 235 cases investigated Highman²² noted only two peptic ulcer patients among the South African natives, and he remarked that this stressed the already known fact that peptic ulcer is an extremely rare condition in the Bantus.

It is interesting to note how the scale increases from native, through mixed breed to Europeans, and it was Eagle and Gillman's^{21a} impression that the ratio of ulcer incidence in the South African European and Eurafrican is the same as for the American and the American negro.

Most of the American reporters have noted a low incidence of peptic ulcers in the negro. For example, Sturtevant and Shapiro found an incidence of 0.5 per cent; Boland, reporting from Grady Hospital in Atlanta gives an incidence of 0.198 per cent as compared to 0.333 among whites.⁷⁰ Portis and Jaffé found an incidence of 3.5 per cent as compared to 5.23 per cent in the white race.^{60b}

Campagna¹³ reporting on peptic ulcer in the negro at Charity Hospital in New Orleans, found in reviewing 300 unselected autopsies at random on negro patients, that 11.3 per cent were admitted with a chief complaint of epigastric distress and 11 out of every hundred died with an epigastric complaint. Thirteen of these deaths or 37 per cent, were directly due to peptic ulcer. Gastric ulcer predominated two to one over duodenal ulcer. In reviewing case records from July, 1937, to August, 1938, he found 132 patients discharged with peptic ulcer and the location was predominately gastric. Campagna does not mention the number of negro patients discharged during this same period so I was unable to determine the percentage. It was his belief that every third day a negro patient suffering with a peptic ulcer is admitted into Charity Hospital. DeBailey, in discussing Campagna's¹³ article, remarked that the incidence of perforated ulcer per 100,000 admissions was 0.04 per cent in the white and 0.036

per cent in the colored so that in this respect there was an almost equal incidence.

No attempt has been made to determine the percentage incidence of peptic ulcer in the American negro, but it is rather generally agreed that ulcer is more infrequent in the negro than in the white race. Many supporters of the belief that ulcer is the result of higher intellectual development and mental strain have cited this fact as a point of proof, yet in contradistinction to this is the high incidence of peptic ulcer as seen among the natives of India, particularly those in the lower social strata.

In conclusion it may be said that the incidence of peptic ulcer has yet to be determined. Why it should be so variable lies in the secret of its etiology. In our medical world it is a serious problem while to the doctor who practices to the south of us, in Russia, or among the natives of Africa it is infrequently seen (see table 3).

ANATOMIC INCIDENCE OF ULCER

Up to this point in this discussion I have used the term peptic ulcer, particularly avoiding the point of its anatomic location, for in regard to frequency, this is as much a debated point as is its incidence among the general population. Some American clinicians rather glibly make the statement that duodenal ulcer is predominant but an examination of the list of writers and their findings as shown in chart 6 will cast no little doubt upon this conclusion.

Most of the early writers were of the opinion that gastric ulcer was much more frequent than duodenal ulcer.^{10, 11, 24, 41} This idea, as I attempted to explain in the introduction, was due to the rather late recognition of duodenal ulcer as an entity. An examination of the list of ratios in table 3 will show that there is a range from 2:1 gastric to duodenal to 1:28. If the attempt is made to segregate these findings it is seen that except for the reports of Osler, Hinton, Portis and Jaffé, and Campagna, the incidence of gastric to duodenal ulcer is decidedly on the duodenal side, ranging from 1:3 (Saltzstein's report on children) to 1:28 (Chamberlin's report on American Army men). The rather high percentage

CHART 2
TOPOGRAPHIC DISTRIBUTION
of 196 Gastric and 158 Duodenal Ulcers (Portis and Jaffé)



of duodenal ulcer as compared to gastric ulcer as seen in the Army can perhaps be explained on the basis of age, for as I will attempt to show later, gastric ulcer usually makes its appearance later in life than duo-

denal ulcer. If we ignore the incidence in children (the discussion of age incidence will show that peptic ulcer in children is comparatively rare), we see that duodenal ulcer predominates over peptic ulcer at a ration of 12:1 to 4:1 among American patients.

Portis and Jaffé's findings were based upon autopsy statistics. They noted that there was definite evidence of activity of the peptic ulcer in 339 necropsies. In 118 cases peptic ulcer was the essential lesion, while in 221 it was incidental. Therefore peptic ulcer as an *incidental* finding was almost twice as frequent. They also remarked that when peptic ulcer was the essential lesion the duodenal ulcer predominated, while if the ulcer was an incidental finding the gastric ulcer predominated. In other words, from this we might conclude that actually there are as many gastric as duodenal ulcers, but clinically duodenal ulcers predominate and that is what we find.

Hinton's statistics were taken from both necropsy and case reports and his low incidence may be partially explained upon the basis of the remarks made in the preceding paragraph. A study of his statistics from the period 1910 to 1931 reveals that there has been a gradual shift from gastric ulcer

TABLE 3

Author	Case or Percentage D. U.	Case or Percentage G. U.	Ratio of Gastric to Duodenal Ulcer
Osler (20) 1915	.....	.....	2-3:1
Hinton (33) 1910-31	1848	1919	.9:1
Mayo (17) 1920	1191	4532	1:4
Sander (69) 1933	5.9	91.5	Approx. 1:15
Southerland (71) 1937	.....	.....	1:9
Lynch (43) 1927 (Canada)	.....	.....	1:7
Eusterman (23) 1935	167	2047	1:12.2
Emery and Monroe (22) 1935	215	1167	1:5
Hinton (33) 1931	169	253	.7:1
Portis and Jaffé (60B):			
White male 1938	2.9	2.3	1:9
White female 1938	1.3	.7	1:7
Campagna (13):			
Negro 1940	.....	.....	2:1
Saltzstein and others (65)			
Children 1940	24	68	1:3
Dwyer and Blackford (21) 1940	103	930	1:9
Thorlakson and Hay (72) 1941	.....	.....	1:6
Chamberlin (15):			
American Army 1942	.5	142	1:28

to duodenal ulcer predominance. Whether this is actual or relative I cannot say.

Campagna's statistics were taken from negro patients entirely and agree with Eagle and Gillman's observation among the South African Bantus that gastric ulcer predominated, but his ratio of 2:1 does not begin to approach their ratio of 17:1. Portis and Jaffé found that in the negro male the incidence of duodenal ulcer was slightly higher than the incidence of gastric ulcer.

In regard to the anatomic location of ulcers in the stomach and the duodenum, there is very little disagreement. Chart 2 is a reproduction of an illustration which accompanied Portis and Jaffé's article. It is a rather composite picture of what most authorities in ulcers in the duodenum and stomach have found.^{23, 26a, 60a, 60b} It will be seen that the highest incidence of ulcers in the stomach is along the lesser curvature and in the region of the pylorus, while ulcerations in the duodenum decrease as one progresses down the intestinal tract. Only 15 per cent were more than 20 mm. from the pyloric ring. In this series sixty of the 158 ulcers were on the anterior wall and 98 were on the posterior wall.

In table 4 it will be seen that while duodenal ulcers are not as prevalent in comparison to gastric ulcer in England as in America, they apparently predominate. It should be remembered that in Army statistics as was brought out previously, the age group is younger than in civil life and consequently duodenal ulcers are more prevalent; but those findings were clinical diagnoses while the statistics from Guy's Hospital and St. Bartholomew are autopsy reports and the prevalence of gastric ulcer may have been an incidental finding as in Portis and Jaffé's series rather than essential lesions. In regard to the other statistics they were cited by Dogra and Lintott and the material from which they were obtained is not given. One would imagine from the situation as seen in our own country that many were clinical findings.

TABLE 4

Author	D.U.	D.&G.	G.U.	Ratio G:D
Moynihan (17)				
Leeds, 1920	563	44	200	1:2½
Wilkie (17)				
Edinburgh, 1927	310	51	52	1:6
Young (17)				
Glasgow, 1927	244	.....	30	1:8
Scoulter (17)				
London, 1927	615	.....	660	1:1
Lintott (42)				
Guy's Hospital	500	.....	500	1:1
St. Bartholomew	375	.....	513	1.2:1
New Lodge Clinic	120	.....	44	1:3
Babey (3)				
Guy's Hospital, 1935	167	.....	191	.8:1
Hurst (37), 1941				
Hospital practice	.....	.....	.....	1:1
Better class patients	.....	.....	.....	1:4
Payne and Newman (58)				
British Army, 1940	42	7	164	1:4
Wilcox (78)				
British Army, 1940	19	.....	6	1:3
Hinds-Howell (34)				
British Army, 1941	218	.....	16	1:14
Brockbank (12)				
British Army, 1942	71.4	.....	13	1:5

INDIA

Dogra¹⁷ states that the predominant lesion seen in India in regard to peptic ulcer is a slow growing chronic ulcer of the first part of the duodenum. This is confirmed by others^{52, 61} as will be seen from the following reporters' results.

TABLE 4

		D.U.	D.&G.	G.U.	Ratio
Bradfield (17)					
Madra	1927	396	15	33	1:13
Somervell (17)					
Trancore	1927	514	4	14	1:32
Rao (17)					
Northern	c. 1938	466	14	71	1:6
Kini (17)					
Vizagapatam	1939	.....	.....	.....	1:30.4
Dogra (17)					
Madras	1940	240	12	5	1:48

Apparently in no other country in the world does duodenal ulcer predominate so markedly over the incidence of gastric ulcer.

EUROPE

Holzweissig³⁸ found in Germany that there was an incidence of 6.5 per cent of cases with gastric ulcer compared to 5.3 per cent of the total cases with duodenal ul-

cer; that is to say a ratio of approximately 1:8 gastric to duodenal ratio, while at the University clinic of Amsterdam there were 120 cases of duodenal ulcer as compared to 44 of gastric ulcer, a ratio of 3:1⁴². Weidinger,⁸⁰ in the clinics at the University of Mauberg, found a ratio of 1:2.6 in favor of duodenal ulcer. Walters and Snell,⁷⁷ reporting on peptic ulcer as seen in Central Europe, remark that the characteristic features of the ulcerations of the stomach and duodenum in certain cities of Germany, in Vienna and Budapest are the multiplicity of lesions in both the antrum of the pylorus and duodenum and commonly associated with this is a marked gastritis, while in France the ulcerations are localized either in the duodenum or the stomach, as in the United States.

OTHER COUNTRIES

Eagle and Gillman^{21a} found among the natives (Bantus) of Africa, a ratio of one duodenal ulcer to every 17 gastric ulcers, while Highman³² observed in 245 Europeans (only two natives in this series) a ratio of 1.2 to 1 in favor of duodenal lesions.

In Java, among the Malays, duodenal ulcer is slightly more frequent than gastric ulcer while among the Chinese residing there the ratio is reversed, being about 2:1.7.

In Australia, Apperly⁵² found an incidence of 3.5 gastric ulcers to one duodenal ulcer out of a series of 135 cases.

Ruiz found in Argentina a predominance of gastric ulcer, 4:1, and in a very small series, the medical department of the United Fruit Company found essentially the same thing in the West Indies. Clark reported the incidence of gastric and duodenal ulcer as equal in the Panama Canal Zone while the Department of Health of the Canal Zone several years later showed a predominance of duodenal ulcerations with a ratio of 2.1 to 1.⁵²

Patricio and Silva⁵⁹ working in the Philippines, found in 93 autopsied cases, 60 gastric ulcers, 30 duodenal ulcers, and three gastro and duodenal ulcers.

As Hans May⁴⁴ has stated, no explanation can be given as to why duodenal ulcers pre-

dominate in some parts of the world while gastric ulcers are more common in others, but the weight of the evidence points toward the duodenum as being the most frequent site of ulceration.

AGE INCIDENCE

The age distribution of ulcer, like incidence and anatomic location, is variable depending upon the reviewer, but not to such a marked degree. The earlier writers noted that peptic ulcer was prevalent through middle life and during the later period of life increased.^{10, 11, 30} Brinton called it the disease of middle and advancing life. Kemp in 1910, reported that 20 to 40 were the most frequent years for the female while 40 to 50 were the more frequent years for the male. These early observations do not seem to hold true in the light of today. The whole problem here again is the type of statistics we are considering, autopsy, clinical, or surgical. Naturally the autopsy statistics would reveal a different age incidence than those of the clinician who attempts to determine the age incidence by the time onset of the disease.

The conclusion of Portis and Jaffé, Hurst and Stewart are: (1) that duodenal ulcer occurs earlier in life than gastric ulcer; (2) that ulcer is much more prevalent in the male than in the female; (3) that peptic ulcer is seen most frequently in the periods of life from the thirtieth to the sixtieth year with a peak in the years of middle age, 35 to 50. Other investigators who came to essentially the same conclusions were Drossner and Miller,²⁰ McMullen,⁴⁷ Muslow, Meyer and Scher,⁴⁹ Patricio and Silva,⁵⁹ Wright-Smith,⁸² and Gordon and Manning.^{26a} Most of these men reported on autopsy material.

For those who attempt to give the age incidence according to onset, there is perhaps no more striking example than that of Allison's^{1, 2} when he compared age of onset against age when seen. His figures were taken from British Navy men and would be expected to fall in younger age groups, but the distinct shift to the right in age groups of those seen as compared to the actual onset of the disease would indi-

cate that ulcer, particularly duodenal, is a disease of younger groups. This was the opinion of Dogra,¹⁷ Dwyer,²¹ Palmer,⁵⁷ Hinds-Howell,³⁴ Weidinger,⁸⁰ and Jennison,³⁹ who found in most instances that the third decade predominated.

Highman's³² demonstration of duodenal and gastric ulcer age incidence among 245 Europeans in South Africa as he saw them clinically, though perhaps too exaggerated to be typical of America, seems to be the clinical idea among many American doctors and from a diagnostic point of view is accurate.

The diagnostician is primarily interested in knowing the possibilities of peptic ulcer in a patient complaining of dyspepsia in a given age group. Rivers and Ferreira at Mayo's, analyzed some 4,223 cases of chronic dyspepsia. They found that per 10,000 consecutive registrants, there was proportionately less dyspepsia among persons less than 30 years of age. Between this age and 60, almost half of the total number of patients had some complaint of digestive difficulty while after 60 the relative proportion who complained of dyspepsia diminished somewhat but the gravity beyond the age of 40 increased. In this series peptic ulcer ranked second (9 per cent) only to functional diseases as a cause of dyspepsia. In males it ranked second (14.1 per cent) while in females it was sixth (3.8 per cent). In the age group 15 to 24 years, peptic ulcer was third (12 per cent) as the cause of dyspepsia, while in the female it was so insignificant that it was not mentioned. In the age group 25 to 39, it was listed second (27 per cent) in the male, functional complaints being first to third (7 per cent) in the female. In the age group of 40 or over, peptic ulcer was listed first in the male with 23 per cent and third (9.5 per cent) in the female. It is interesting to note that in all age groups except this one, functional disorders were the highest causes of dyspepsia.^{63a} From these studies we may conclude that any male patient coming into a clinic with a complaint of dyspepsia is extremely likely, in this country at least, to have a peptic ulcer, regardless of age,

and in men over 40 it is the most likely diagnosis.

From the previous discussion and after referring to the accompanying tables, one would come to the conclusion that peptic ulcer is unheard of in children. This is not true, but according to Saltzstein and others, they are extremely rare. Proctor,¹⁶ reviewing the literature in 1925, found only 19 cases of primary duodenal ulcer in children. Since that time there seems to have been a great increase in the number of cases diagnosed, for Saltzstein, Farbmann, and Sandweiss,⁶⁵ in reviewing the literature in 1940, found 105 cases, in the ratio of one male to one female. There seems to be an increase in occurrence, whether this is actual or improved diagnosing cannot be determined, but for example in a recent publication of the Archives of Disease in Childhood, two of the four articles in the journal are case reports of ulcerations in children. According to Clyne and Rabinowitch,¹⁶ the first investigations of peptic ulcers in children were carried on by Theille who classified them into three groups: neonatal, infancy, and childhood. The majority of ulcers reported have been in the later group for they are rarely looked for or thought of in the former groups unless the baby develops hematemesis or tarry stools. According to Guthrie,²⁹ the duodenal ulcer predominates almost exclusively and is of an acute type in the majority of cases. Most of them seen in infancy are in the early weeks of life and are believed to originate after birth.

SEX INCIDENCE

References have been made in previous portions of this paper in giving statistics which have shown that the male is more frequently afflicted with peptic ulcer than the female. Upon this one point, the majority of reporters agree, but this has not always been the case. If one looks in any good medical book from the period 1856 to about 1910, in which this issue is discussed, he will find that almost universally it was the opinion at that day that women were the predominate ulcer group. This sudden change probably came as a recognition of duodenal ulcer for many reporters today

find that in regard to the sex incidence in gastric ulcer, the ratio is almost equal or slightly predominantly female.^{38, 60b, 80} Duodenal ulcer, except for the Javanese⁷ definitely predominates in the male. Table 5 gives the ratio of male to female as observed by different writers in regard to the occurrence of peptic ulcer. The highest ratio male : female is found in India, the lowest in Java, 0.95:1. In America and England the concensus of opinion is that peptic ulcer is seen about four times more frequently in the male than in the female.

Many attempts have been made to explain the low incidence of peptic ulcer in the female. Highman³² states that it is generally known that the acid curve in the normal female is lower than in the male, but this does not answer the question; it only raises another. Sandweiss and others have noted that during pregnancy, symptoms of ulcer were alleviated and the effect seemed to be beneficial, while in the examination of the records of 70,130 pregnant women consecutively admitted to the hospital, they found only one case of peptic ulcer. Weidinger in Germany, noted in his series that the predominance of female ulcer patients occurred at the climacteric and he was of the opinion that vascular changes may be of some importance. Some American workers have tried to explain the female ulcer predominance on a hormonal basis.

Winklestein⁷⁹ noted, in his series of 540 peptic ulcer patients, that from 40 to 44 per cent of the women were at the menopause. He explained their development on the unchecked or hyperactivity of the anterior pituitary gland which occurs at the menopause due to the failure of the ovary to secrete estrin. He treated some 20 female ulcer patients with estrogen therapy and stated that the symptomatic relief was good. Sandweiss and his co-workers, stressing the importance of the endocrines, noted that there was a high incidence of endocrinopathies in 30 females with ulcers and that in those patients who developed ulcer before the menopause there was an aggravation of their symptoms at that time. The question is yet unsettled like so many

others, and at present it is one of the many unexplainable vagaries of the disease.

TABLE 5

American or British	Year	Male:Female
Lynch	1923	2.7:1
Sturtevant & Shapiro	1926	3:1
Sander	1933	2.1:1
Eusterman & Balfour	1935	4:1
Emery & Monroe	1935	5.5:1
Wright-Smith	1937	3.95:1
Portis & Jaffé	1938	1.2:1
Jennison	1938	4.5:1
Rivers & Ferreira	1938	4:1
Campagna (Negro)	1940	8:1
Drossner & Miller	1940	3:1
Gordon & Manning	1941	2:1
Portis (text)	1941	4:1
Palmer	1942	3:1
Eagle & Gilmann	1938	8:1
(South African Bantus)		
Ruiz (Argentina)	1934	9:1
Patricio-Silva	1940	4:1
(Philippines)		
Dogra (India)	1941	18:1
Kouveenair	1934	.95:1
(Javanese)		
Clark (Panama)	1914	1:1

THE INCIDENCE OF COMPLICATIONS OF PEPTIC
ULCER AND ASSOCIATED LESIONS

“Of the complications of peptic ulcer hemorrhage is the commonest, occurring at one time or another in approximately a third of all cases. If we except perforation, it is the most disturbing complication” (Hurst and Ryle).³⁶

According to most physicians' series, this statement seems to be true. Drossner²⁰ found an incidence of 19 per cent hemorrhage; Blackford and Cole⁴ an incidence of 14 per cent gross hemorrhage and 4 per cent massive hemorrhage with 55 deaths out of 216 deaths from ulcer; Babey³ found an incidence of 27 per cent hemorrhage in gastric ulcer, 13 per cent duodenal ulcer, and 60 per cent anastomotic with a mortality that varied from 1 to 25 per cent, depending upon the reporter; and Gordon and Manning^{26a} found an incidence of bleeding in 17.7 per cent of their autopsy cases.

In the course of preparing a Hunterian lecture on duodenal ulcer in 1932, there were found during 20 years at Guy's Hospital, only 25 deaths from hemorrhage from duodenal ulcer as compared with 128 deaths from other complications and sequels.

Hurst³⁶ and Stewart⁶⁷ remarked that in their private practice they had never seen reason to adopt a pessimistic attitude in the presence of these hemorrhages and they found that most physicians of wide experience share this opinion. They found that the incidence of new cases of hemorrhage in most large general practices is between 1.5 and 2 per cent per year and gave as the incidence of hemorrhage 30 per cent in gastric and duodenal ulcer and 45 per cent in anastomotic ulcer. They concluded that the mortality from hemorrhage in all cases of ulcer, whether they have previously bled or not, is about 0.4 per cent.³⁶

Portis and Jaffé found hemorrhage as a cause of death in 0.43 per cent of all cases, but in those cases in which ulcer was the essential lesion, 18.3 per cent died from hemorrhage, this being considerably higher than Hurst and Stewart's quotation. It was the opinion of Portis and Jaffé^{60b} that hemorrhage was the most frequent cause of death in gastric ulcer.

In other words, though hemorrhage in some physicians' opinions, is a rather frequent complication of peptic ulcer, as an actual cause of mortality it is of minor importance. The validity of that statement depends a great deal upon the age of the patient. Blackford and Cole⁴ found that the commonly quoted mortality rate of 5 per cent for peptic ulcer hemorrhage is about one-sixth of the actual mortality rate in older patients, and Dwyer et al.²¹ in a later article remarked that massive hemorrhage from peptic ulcer is found more frequently before 45 but there is a mortality rate of only 4 per cent in this age group, while in patients above 45 the mortality rate is about 96 per cent. Many doctors base the treatment of their patients on these statistics, conservative in the younger age groups with surgery reserved for the older age groups.

Perforation seems to be next in importance in regard to complications. In Graves²⁷ article the following men are quoted and their percentage of ulcer perforation is given: Spech—10 per cent of all ulcers; Cuhor—6.5 per cent of all pa-

tients with gastric ulcer and 25 per cent of all patients with duodenal ulcer; Hart—10 per cent of all duodenal ulcers. In Drossner's²⁰ series there was an incidence of 11 per cent, Odom and DeBakey⁵⁵ found an incidence of 8 per cent among all ulcer cases, and Blackford and Cole⁴ found an incidence of 6 per cent among their patients. They⁴ also noted that there were twice as many acute perforations before the ages of 30 and 40 as in other decades. That is to say, 61 per cent of perforations occur under 45 years of age. This same observation was made by Graves. In Jennison's³⁹ series, perforation occurred in only 1.6 per cent of cases and was less frequent than stenosis. Gordon and Manning found perforation in 25 per cent of their cases and Portis and Jaffé^{60b} found an incidence of 20 per cent perforation in those ulcers which were essential findings and came to the conclusion that perforation is the most common cause of death in cases of duodenal ulcer. This was in direct opposition to their findings in European clinics. According to Tice, most of the patients operated upon within six to eight hours recover. After twelve hours the mortality rises rapidly. In the 200 cases reported by Morrison⁷³ there were 43 deaths.

Another complication of peptic ulcer, though rather infrequent, is that of stenosis. This was seen in 4 per cent of Drossner's²⁰ cases while Jennison³⁹ found 2.6 per cent incidence in her series. Hurst and Stewart³⁸ showed that the majority of cases of pyloric obstruction, whether inflammatory or obstructive, were secondary to duodenal rather than gastric ulcer. Portis and Jaffé^{60b} noted that in those cases where the ulcer was the essential finding there was a 7.5 percentage showing some evidence of stenosis.

In regard to carcinomatous change McCarty^{33b} considers 68 per cent of gastric ulcers precancerous. This is regarded by most pathologists as extremely high. Boyd⁸ states that about 5 per cent of chronic gastric ulcers become malignant while about 20 per cent of gastric cancer arises from pre-existing ulcer. Wilensky and Tholheimer

published nearly 20 years ago that about 1 to 2 per cent of gastric ulcer was precancerous, while Hinton and Trubek^{33a} came to the conclusion that it was extremely rare. Carcinoma of the duodenum is so rare that for practical purposes one need not be concerned with it if a duodenal ulcer is present.⁷³

The following incidental findings in autopsies on peptic ulcers are given because they were striking enough to be noted by these men and may be of some etiologic significance though they are so variable that it is difficult to interpret them. Gordon and Manning^{26a} found that 58 per cent of their ulcer cases were accompanied by definite liver damage as contrasted with a control group of cases where the incidence was 35 per cent. Portis and Jaffé^{60b} were struck by the large amount of hypertensive heart disease associated with their peptic ulcer cases, but they used no control series and for patients of that age hypertensive heart disease is no infrequent finding. They also found that goiter was more frequently associated with duodenal ulcers, but they dismissed this finding with the statement that the lesion was in the main non-symptomatic and in most instances was simple colloid in character without clinical or anatomic evidence of hyperfunction. Vanderhae⁷⁵ found in 21.6 per cent of 51 cases of gastroduodenal ulceration in various stages of development, some associated well-marked localized pathologic alterations of the brain. This corresponds closely with Hartman³¹ who noted 17 per cent association. Cushing called attention to the relationship of brain lesions and ulcerations of the stomach and Graves and Hodes²⁸ found in 147 hypophyseal tumor cases, an incidence of 4 per cent ulcerations. Since this is not as high as peptic ulcerations in many series of autopsies, it is not a very significant finding. There seems to be no idea of importance forthcoming in these various observations. One might take any one of them as evidence to support a theory to etiology, but as to their actual significance, there is too little confirmatory work to make them contributory.

OCCUPATIONAL INCIDENCE

There has been a great deal of comment in both medical and lay magazines on the importance of nervous and mental strain on the production of peptic ulcer.^{24, 31, 72, 76} Therefore one would expect to find among those occupations which entailed responsibility and position, a higher incidence of dyspepsia. Unfortunately general practitioners rarely have sufficient leisure or assistance to keep records from which accurate statistics can be obtained.³⁶ Consequently most statistics regarding occupation are taken from groups seen in large charity institutions and do not give a fair comparison.

The early writers noted that ulcer was more prevalent among cooks, female servants, shoe makers, and porcelain makers.^{10, 41} Brinton and Kemp concluded that it was a matter of coincidence, while Budd¹¹ stated that ulcer seemed to be much more frequent among the poor than among the rich and believed that this was due to insufficient food which resulted in anemia and a predisposition to ulcer. There seems to be little evidence that their early observation on occupation is true today.³⁸

Emery and Monroe²² found that among 1435 patients, 48 per cent did manual labor, 33 per cent clerical work, and 19 per cent housework, but no conclusion can be drawn from this because they do not compare their findings with the percentage variations among these types of clinic patients. The same criticism may be made of Church and Hinton's¹⁴ work when they gave the following occupational incidence:

	Per cent
Chauffeur, truckman, auto mechanic.....	15
Clerk, ticket agent, cashier, teacher.....	14
Elevator operator, janitor, porter, shipping clerk	12
Carpenter, painter, steamfitter, ironworker, fireman, policeman, longshoreman.....	10
Tailor and cutter.....	7
Housewife, cook	6
Salesman	5
Artists, actor, banker.....	3

Walker⁷⁶ noted that among railroad workers there was an incidence of 4 per cent in 2785 patients seen. This is rather high in

consideration of peptic ulcer as it is seen and recognized among general admission patients. He concluded that this prevalence was due to the type of life these men live in their occupations.

Among different groups in the Army during the last war the incidence of peptic ulcer among officers was much higher than among enlisted men. A comparison of the statistics given by the Medical Department of the United States Army in World War I shows an incidence of 0.35 per cent per 1000 enlisted men to 0.79 per cent per 1000 among officers.⁵³ In a recent study by Allison^{1, 2} on peptic ulcer in the Royal Navy we read, ". . . All the usual naval ratings were represented among the patients, e. g. seamen, stokers, marines, signalmen, telegraphists, cooks, and there was nothing to suggest that peptic ulcer was more prevalent in one branch of the service than another. The figures suggest that there was a higher proportion of dyspeptics in destroyers and small auxiliary craft (trawlers, drifters, mine sweepers, and patrol boats) but the number is too small and the scope too limited." He also observed that men who had retired from active service and had been recalled at the outbreak of hostilities were more affected by dyspepsia in the first year of the war than those who were still serving and who were accustomed to seagoing experience.

Hingston (1927) in Calcutta, made the observation that ulcer was more frequent in those persons of better class who are well educated and lead a more or less sedentary life, but Dogra¹⁷ does not agree for he states that in India ulcer affects the poor in whatever walk of life they are situated. Since the majority of the poor are laborers and cultivators, the largest number of cases occurred amongst them irrespective of the race, caste or religion. Patricio and Silva,⁵⁹ reporting on occupational incidence of peptic ulcer in the Philippines, came to essentially the same conclusion as Dogra: ". . . The incidence of peptic ulcer in various occupations, shows that the disease affects chiefly people who are hard workers, i. e. laborers, carpenters and fishermen." The jobless

ranked second on their list but they used no control group.

Jennison,³⁹ reporting on the incidence of peptic ulcer in the employees (14,000) of the Metropolitan Life Insurance Co., stated that she had expected to find the higher incidence among the clerical and executive groups where nervous and mental strain was higher, but building drays had the highest incidence of ulcer; i. e. engineers, pointers, carpenters, electricians, elevator operators, and cleaning women.

McCarrison⁴⁶ is of the opinion that occupation does not seem to be a factor. The disease occurs in persons in all walks of life, and Meyer and Scher⁴⁹ were of the opinion, after studying occupation in 97 patients, that there was a wide scattering in the type of employment carried on by these patients, including sedentary, light and labor jobs. They felt that occupation which is satisfactory to the individual is also conducive to symptomatic improvement. The wide diversity in the type of employment seemed significant, and the fact that analysis of changes in occupation would indicate that changes were often necessitated because of social maladjustment rather than physical factors of the employment. They concluded by stating that "any report on peptic ulcer therapy is inadequate which fails to consider the occupational adjustment of the patient."

Hurst and Stewart³⁸ were of the opinion that occupation was of little significance but stated that there seemed to be a special liability among members of the fighting service and to a less extent among members of the medical profession.

The bulk of the evidence might indicate that peptic ulcer was more prevalent among the lower income brackets which is no doubt true, considering that the lower income group is the largest in the world, but perhaps the best summary of the problem is that given by Eusterman:²³ "Consideration of occupation to peptic ulcer has given the impression that the disease is most prevalent among those who lead lives entailing great nervous strain and responsibility. This, however, awaits proof. It seems rea-

sonable that those whose routine of life, either because of force or circumstances, or because of their own dispositions, is associated with constant and excessive strain on the nervous system, should be predisposed to ulcer. It is certainly true that if such habits are not moderated, peptic ulcer is much less likely to heal."

THE INCIDENCE OF PEPTIC ULCER IN VARIOUS BODY TYPES AND PERSONALITY TYPES

Draper's¹⁹ experience over twenty years has lead him to believe that in the morphologic phase there is a type of individual in which peptic ulcer is seen most frequently. This has been noted by several authors. Allison^{1, 2} remarked in his studies on peptic ulcer in the Navy that thin types predominated and that it was exceptional to meet with a corpulent or obese subject. Actual weight for 30 of these men showed that 27 were underweight in accordance to the weight-height chart. This ranged from five to 38 pounds, with the average being 16 pounds below normal. Robinson and Brucer,⁶⁴ in an attempt to determine if there is a body habitus characteristic of the ulcer patient, compared 250 men with gastric or duodenal ulcer against a control group of 7478 males. They found that: (1) the ulcer patient tends to be normal or underweight, he is seldom overweight; (2) the ulcer patient differed from the control group in every measure except height; (3) the chest circumference of the ulcer patient tends to be much smaller than is found in an unselected population. Only rarely does a person with a large chest have ulcer; (4) the abdomen at the level of the umbilicus is smaller; (5) the body build as measured by the chest-height index shows the ulcer patient usually has a slender, narrow or linear type build, almost never lateral; (6) the surface area of the ulcer patient is smaller; (7) the systolic blood pressure is lower while the diastolic blood pressure showed no significant difference.

Feignbaum and Howat²⁵ found that there were no anatomic characteristics distinctive of the patient with peptic ulcer. But an examination of their report shows that they used 37 anthropometric measurements

to differentiate their patients. Among some of the measurements used were nail length and breadth, finger circumference, ear length and width, interpapillary spaces. These things do not contribute to our impression as to the build of an individual; that is to say whether he is stout and fat, tall and thin, and consequently are of little value to the clinician. They did find that the thoracic A. P., chest circumference, and weight were lower than that of a similar group of diabetic patients.

After making rather detailed anthropologic measurements on 100 consecutive cases diagnosed clinically as having peptic ulcer and comparing these findings with a group of 25 healthy students, Jacob Norman⁵⁴ came to the conclusion that simple anthropologic measurements of patients suffering from gastrointestinal diseases vary from case to case and are of no practical value for diagnostic purposes.

Morley⁵⁰ stated that while duodenal ulcer was frequent in the asthenic type, duodenal ulcer otherwise occurred in hyposthenic, sthenic type and hypersthenic types in about the same proportion as these types occur in a hundred normal patients. Moynihan⁵¹ reported that 68 per cent of his patients who had surgically verified duodenal ulcer were either of the orthotonic or hypotonic type.

Draper contends that perhaps all these patients do not represent extreme linearity. But even in the stockier forms a definite tendency to gracile bony structure, narrow subcostal and obtuse gonial angles and long, narrow teeth predominate. The linear trend is also seen in their most delicately drawn long, narrow faces. There is also found a well defined emphasis upon the feminine component of that curious mixture of masculine and feminine qualities which is common to all human beings of either sex. On the physiologic bases Draper¹⁹ stated that the chief insignia of the ulcer patient are found in the autonomic irritability, such as sweating palms, tendency to widened palpebral fissures, slight sinus arrhythmia and prompt slowing of the heart rate by deep breathing or pressure on the carotid sinus.

In regard to personality makeup, Draper¹⁹ analyzed 80 unselected cases of gastric and duodenal ulcer and found that 97.4 per cent of the patients had a persistent hold on mother principle and fear of loss of mother's surrogate approval. Eighty-four per cent had an inner sense of insecurity based upon actual or supposed physical inferiority including gynec emphasis, 64.9 per cent suffered with jealousy and aggression tendency, 56.2 per cent compensatory striving, and 49.2 per cent guilt and fear related to sex problems.

In regard to an inheritance of peptic ulcer constitution, there should be a higher percentage of positive family history indicative of peptic ulcer in the ulcer patient. Riecher⁶² found that there is a family incidence of peptic ulcer in upwards of 30 per cent of the cases reported in the literature. Dogra,¹⁷ in his cases in India, stated that roughly one in every five gave a family history of one or more members of the family affected. Hurst³⁵ was one of the first men to make note of the fact that peptic ulcer patients frequently gave a family history of this condition and he has reported several striking examples in the literature. Draper and Touraine¹⁸ found that 70 per cent of ulcer patients' families are of slender or medium build. Of the fathers of ulcer patients, 70 per cent were described as medium or slender and only 30 per cent as stocky or stout, while 55 per cent of the mothers of ulcer patients were thin, 45 per cent were stout.

PEPTIC ULCER: ITS IMPORTANCE IN THE PRESENT
NATIONAL CRISIS

It seems to me that in our present day and age, no paper on the incidence of peptic ulcer would be complete if it did not consider its significance among the armed forces.

Russel S. Boles,⁶ in his presidential address to a group of gastroenterologists, remarked: "A section of gastroenterology was authorized by the War Department in July 1940, for all wartime hospitals. The War Department furthermore adopted the policy of placing a gastroenterologist on the staff of each of the general hospitals and in sta-

tion hospitals of 800 bed capacity and over. That the appointment of specialists in gastroenterology will prove to be of immeasurable benefit to the military service may be gathered from the fact that diseases of the digestive tract in the present war occupy first place, and by a wide margin, as a cause of disability in the armed forces of the allied nations. In the first World War such diseases, according to the statistics of the Surgeon General's Office, were listed in no higher than seventh place. It is worthy of particular comment that peptic ulcer, especially of the duodenum, is the main reason for the high rate of disability today."

Brockbank¹², in January of 1942, reporting from England on the dyspeptic soldier said, "War had not been long declared before it was realized that the medical services of the army were facing a problem which had caused no particular anxiety during the war of 1914-1918."

By the end of February 1941, 18 months after the war started, a grand total of 10,923 soldiers had been admitted to hospitals. Of these 931 or 8.5 per cent were dyspeptic and of this group 13.3 per cent had a peptic ulcer, 71.4 per cent of the ulcer group were duodenal and 15.3 per cent pyloric. It was Brockbank's¹² opinion that only about 2 per cent of these developed during army life.

The seriousness of the problem is not that of mortality but one of morbidity. Brockbank, further elucidating, states that in the early days of the war it was their habit to return to duty, soldiers with proved ulcer in whom the lesion did not appear to be particularly active. In September 1939, 50 per cent of the men were returned to their units. This proved to be a mistake for the men became a nuisance. In October 1939, only 29 per cent were sent back to duty. Thereafter it was decided to board out of the Army all men with proved ulcer with symptoms. For the remainder of the 18 months only 7 per cent of these soldiers were sent back to duty. These were men whose symptoms were trivial and whose duties were such that they could modify army food to their needs. This was not in accordance

with Army regulations, for even in peace time it was held that peptic ulceration was incompatible with Army routine though the man was billeting himself at home. In February 1941, after the Medical War Board had attempted several measures to handle the peptic ulcer patient in the Army, even going so far as to demote him to relieve strain of responsibility, it was their opinion that in such cases it was useless as they will relapse in any category and that all men with chronic history and physical manifestation, active cases, and those with a history of operation should be discharged as permanently unfit for military duty.¹²

Brockbank concluded that there was no increase in the incidence of peptic ulceration as the result of the war. What the present war has revealed is that peptic ulcer and gastritis were exceedingly common in the civilian population before the war began, and the fact, not altogether surprising, that organic dyspepsia is incompatible with army life.

Table 6 shows the published findings in patients admitted to service hospitals in the present war in America and France. The type of organization of each one of these is as follows: Allison and Thomas reviewed 100 cases of sailors and marines with dyspepsia and demonstrated 45 per cent ulcer by x-ray; Spillane's statistics (1941) cover 12 months and are described as cases of chronic dyspepsia; Morris' (1940) conclusions are based on 500 men sent for x-ray examination and cover many of the cases in Brockbank's series. His percentage figures are higher than Brockbank's because his series did not cover those cases with mild symptoms not considered worthy of x-ray. Maingot's (1941) series deals with 256 soldiers referred to a general hospital on account of dyspeptic symptoms. Graham and Kerr's (1941) were drawn from all branches, Navy, Army, Air Force, and Women's Auxiliary Service. The Army predominated. Wilcox's (1940) material was 260 medical cases sent from France to sector hospitals in England and must be presumed to consist of the more severe grades of dyspepsia to merit being sent back from

France. The same applies to the figures of Payne and Newman (1940), for their 287 patients already suggested a gastric or duodenal lesion before they were asked to see them. Chamberlin's statistics are taken from a large number of general admissions to an Army hospital in Atlanta, while those from Tilton General Hospital were cases admitted to the gastrointestinal section.

TABLE 6

Author Type	Hospital	Cases	Percentage Ulcer	G. U.	D. U.	Percentage D. U.
Allison & Thomas	Naval	100	45	6	34	85
Brockbank	Military	931	42.5	52	275	84
Graham & Kerr	Military	246	64	23	135	85
Maingot	General	256	56	15	128	89
Morris	Military	500	50	.....	.....	.....
Payne & Newman	E.M.S.	287	89	42	164	80
Spillane	Military	200	32	10	54	84
Wilcox	E.M.S.	41	68	7	19	73
The above are British reports.						
Chamberlin (Lawson Genl. Hosp., Atlanta)	Army	3,492	98	3	95	97
(Tilton Genl. Hosp., Fort Dix, N. J.)	Army	113	43	2	47	95

Chamberlin concluded that the statistics of peptic ulcer from two general hospitals are similar. This report shows a high incidence of enlisted personnel with ulcer who should not have been in the service. Only eight of the series developed symptoms after enlisting. In their opinion, a man with a peptic ulcer is unfit for military service. This has been borne out and emphasized by the statistics, that is, the average length of service for the entire group of ulcer patients from the two hospitals was five months. No matter how well these men were before induction, their breakdown in the army was inevitable. The chance that a patient with peptic ulcer may escape disabling symptoms in the service is slight. He is an expense to the government and his induction or commission is unwise in the light of their experience.¹⁵

According to Palmer,⁵⁷ the Surgeon Generals of the Army and Navy of the United States have wisely ruled that men known to have had an active ulcer within the past five years are not acceptable for service. It was his conclusion that digestive disorders con-

stitute a major problem in military medicine. The incidence of peptic ulcer in such disorders is very high.

SUMMARY

An attempt has been made to report the incidence of peptic ulcer as it is observed today. The following conclusions were drawn:

1. A study of statistical reports from various countries all over the world reveals that there is a marked variability in incidence of peptic ulcer from country to country, but that in America, approximately 12 per cent of all persons have peptic ulcer at sometime in their lives.

2. The ratio of gastric to duodenal ulcer has been discussed as to what is seen in America and other countries. This, like frequency, is extremely variable but among patients seen in this country duodenal lesions predominate more frequently, about 4:1. A schematic drawing of the stomach and duodenum shows the locations of ulcers as seen in those organs. This reveals that the most susceptible areas in the stomach were the lesser curvature and the pylorus, while the incidence in the duodenum decreased progressively from the pyloric ring.

3. Age incidence is discussed and several graphic illustrations are given which reveal that the period of life from the thirtieth to the sixtieth year with a peak in the middle age years (35-50), is the most frequent period for peptic ulcer, and secondly that duodenal ulcer makes its appearance earlier in life than gastric ulcer. The expectancy of peptic ulcer in various age groups is discussed and a short dissertation on peptic ulcer in children is given.

4. Reviewing the work of a large number of reporters, it was found that peptic ulcer is predominantly a lesion found in the male in practically every country of the world except Java. This male predominance is more marked in cases of duodenal ulcer than gastric ulcer. An attempt is made to explain this fact in the light of a few observers' work and the main evidence, though slight, points toward a hormonal basis.

5. The incidence of complications is discussed and it is found that in most instances

hemorrhage is the most frequent complication but perforation is the more serious. Some incidental lesions found associated with peptic ulcer by various pathologists are given but no conclusions are drawn.

6. A study of occupation among peptic ulcer cases reveals that in most of the series the laborer and unemployed were the most frequent classes affected but in most instances no control group was used. This study was undertaken because it was my opinion that among people with greater responsibility and mental strain, peptic ulcer was more common. This idea awaits proof.

7. Draper's contention that there is a body type peculiar to peptic ulcer is discussed but the evidence is so unreliable in this respect that no definite conclusion can be drawn. A brief statement of personality makeup in the ulcer patient is given (quoted from Draper) and the importance of family history is considered.

8. The paper is concluded with a review of the problem of peptic ulcer as it is seen among the Allies of today. The evidence points that dyspepsia is the number one medical problem in the armed forces. All reports up to this date show that the incidence of ulcer is 30 per cent or over with the outstanding majority in the duodenum. The opinion of several authorities is given on this matter and the decision of the Surgeon Generals of the Army and Navy to refuse to accept these men is stated.

The conclusion is drawn that peptic ulcer is a problem of national importance, and that the high incidence as seen among the armed forces is not a result of the war but only called to attention the numerous cases which existed but which were not recognized. In spite of the tremendous amount of study and research that has been done on the problem of etiology of peptic ulcer, apparently we are no nearer the solution that Cruviellier and Abercrombie were when they first described it.

REFERENCES

1. Allison, R. S.: Peptic ulcer in the Royal Navy: Aetiology, *Lancet*, 1:596, 1941.
2. Allison, R. H., and Thomas, A. R.: Peptic ulcer in the Royal Navy: symptoms and pathology, *Lancet*, 1:565, 1941.

3. Babey, Andrew M.: Incidence, mortality and treatment of hemorrhage in gastric, duodenal and anastomatic ulcer, *Guy's Hosp. Rep.*, 86:129, 1936.
4. Blackford, J. M., and Cole, W. S.: Massive hemorrhage from peptic ulcer: a study based on vital statistics of the city of Seattle during four years and on personal experience in private practice, *Am. J. Digest Dis.*, 6:637, 1939.
5. Bloom, A. R.: Roentgen diagnosis of duodenal ulcer, *Radiology*, 36:287, 1941.
6. Boles, Russel S.: The war's challenge to gastroenterology, *Am. J. Digest Dis.*, 9:241, 1942.
7. Bonne, C., et al.: Morphology of the stomach and gastric secretions in Malays and Chinese and the different incidence of gastric ulcer and cancer in these races, *Am. J. Cancer*, 33:265, 1938.
8. Boyd, Wm.: *Textbook of Pathology*, 3d ed. Philadelphia, Lea and Febiger, p. 531.
9. Bergsma, Stuart: Gastric and duodenal ulcer in the black people of Abyssinia, *Arch. Int. Med.*, 47:144, 1931.
10. Brinton, Wm.: *Diseases of the Stomach*, Philadelphia, Lee and Blanchard, 1865. p. 129.
11. Budd, George: *On the Organic Disease and Functional Disorders of the Stomach*, New York, Samuel & William Wood, 1856. p. 95.
12. Brockbank, Wm.: The dyspeptic soldier; a record of 931 consecutive cases, *Lancet*, 1:39, 1942.
13. Campagna, Maurice: Peptic ulcer in the negro, *New Orleans M. & S. J.*, 92:366, 1940.
14. Church, R. E., and Hinton, J. W.: A study of 671 cases of peptic ulcer with special emphasis on 114 post-operative cases, *New York State M. J.*, 34:1079, 1934.
15. Chamberlin, D. T.: Peptic ulcer and irritable colon in the Army, *Am. J. Digest Dis.*, 9:245, 1942.
16. Clyne, D. G. W., and Rabinowitch, J.: Four cases of duodenal ulceration in children simulating acute appendicitis, *Arch. Dis. Child.*, 17:102, 1942.
17. Dogra, J. R.: Studies of peptic ulcer in South India: Part 1, Introduction and clinical study of 285 cases, *Indian J. M. Research*, 28:145, 1940; Part 2, Statistical study, *Ibid.*, 28:481, 1940; Part 4, Incidence of peptic ulcer in India with particular reference to South India, *Ibid.*, 29:665, 1941.
18. Draper, G., and Touraine, G. A.: The man-environment unit and peptic ulcer, *Arch. Int. Med.*, 49:616, 1942.
19. Draper, G.: The emotional component of the ulcer susceptible constitution, *Ann. Int. Med.*, 16:633, 1942.
20. Drossner, J. L., and Miller, T. G.: The natural history and diagnosis of gastric ulcer, *Am. J. Med. Sci.*, 199:30, 1940.
21. Dwyer, M. F., Blackford, J. M., et al.: Peptic ulcer: A review of 1,033 cases and a follow-up study of the patients diagnosed between ten and twenty years ago, *Radiology*, 36:217, 1941.
- 21A. Eagle, P. C., and Gillman, Joseph: The incidence of peptic ulcer in the South African Bantu, *South Afr. J. Med. Sci.*, 3:1, 1938.
22. Emery, E. S., and Monroe, R. T.: Peptic ulcer: Nature and treatment based on a study of 1,435 cases, *Arch. Int. Med.*, 55:271, 1935.
23. Ensternmann, G. B., and Balfour, D. C.: *The Stomach and Duodenum*, Philadelphia, W. B. Saunders & Co. 1935.
24. Ewald, C. A.: *Disease of the Stomach*, New York, Appleton & Co. 1902. p. 391.
25. Feingbaum, J., and Howat, D.: The relation between physical constitution and the incidence of disease, the disease group including peptic ulcer, cholecystitis, and diabetes mellitus, *J. Clin. Invest.*, 13:121, 1934.
- 26A. Gordon, J. S., and Manning, J. J.: An autopsy survey of gastroduodenal ulcers in the Philadelphia General Hospital, 1920-1937, *Am. J. Med. Sci.*, 202:423, 1941.
- 26B. Graham, J. G., and Kerr, J. D. O.: Digestive disorders in the forces, *Brit. M. J.*, 1:473, 1941.
27. Graves, Amos M.: Perforated peptic ulcer in German clinics, *Ann. Surg.*, 98:197, 1933.
28. Graves, A. J., and Hodes, P. J.: Peptic ulcer associated with pituitary tumor, *J. Florida M. A.*, 27:503, 1941.
29. Gnthrie, K. J.: Peptic ulcer in infancy and childhood, with a review of the literature, *Arch. Dis. Child.*, 17:82, 1942.
30. Habershon, S. O.: *Disease of the Stomach*, Philadelphia, Lindsay & Blakiston, 1879. p. 264.
31. Harman, H. R.: Neurologic factor in peptic ulcer, *Med. Clin. N. Amer.*, 1939. p. 1357-69.
32. Highman, Sonia E.: Analysis of five year hospital records of gastric and duodenal ulcers, *South Afr. J. M. Sci.*, 5:20, 1940.
33. Hinton, J. W.: Incidence of peptic ulcer and complication, *Am. J. Surg.*, 20:102, 1930.
- 33A. Hinton, J. W., and Trubex, Max: Transformation of gastric ulcer into gastric carcinoma, *Surg. Gynec. & Obstet.*, 64:16, 1937.
34. Hinds-Howell, C. A.: Review of dyspepsia in the Army, *Brit. M. J.*, 2:473, 1941.
35. Hurst, Sir Arthur: Gastric and duodenal ulcer as a family disease, *Gny's Hosp. Rep.*, 89:441, 1939.
36. Hurst, A. F., and Ryle, J. A.: Incidence, mortality, and treatment of hemorrhage in gastric and duodenal ulcer, *Lancet*, 1:1, 1937.
37. Hurst, A. F.: Digestive disorders in soldiers, *Am. J. Digest. Dis.*, 8:321, 1941.
38. Hurst, A. F., and Stewart, M. J.: *Gastric and Duodenal Ulcer*, New York, Oxford Univ. Press, 1929.
39. Jennison, Janette: Observations made on a group of patients with duodenal ulcer, *Am. J. Med. Sci.*, 196:654, 1938.
40. Jones, C. M.: Gastroenterology: A review of the literature from July 1940 to July 1941, *Arch. Int. Med.*, 68:765, 1941.
41. Kemp, R. C.: *Diseases of the Stomach and Intestines*, Philadelphia, W. B. Saunders & Co., 1910. p. 212.
42. Lintott, G. A.: Etiology of cancer of the stomach: Factors involved in the varying incidence in different classes and different countries, *Gny's Hosp. Rep.*, 86:293, 1936.
43. Lynch, Ralph: Analysis of ulcer of the stomach and duodenum, *Canad. M. A. J.*, 17:677, 1927.
44. May, Hans: Extent and character of peptic ulcer and gastro-duodenitis in different countries, *Surg. Gynec. & Obstet.*, 66:666, 1938.
45. Mayo, C. H. In *The Oxford Medicine*. N. Y. Oxford Univ. Press, 1936. p. 125.
46. McCarrison, R.: Problems of nutrition in India, *Nurt. Abst. & Rev.*, 2:1, 1932.
47. McMullen, J. W.: A roentgenographic study of the relative incidence of gastric and duodenal ulcer, *Radiology*, 37:194, 1941.
48. Meeting of the Royal Society of Medicine: Dyspepsia in the Forces, *Lancet*, 1:448, 1941.
49. Meyer, J., and Scher, E.: Study of the occupational adjustment of patients with peptic ulcer, *Rev. Gastroenterol.*, 5:54, 1938.
50. Morley, H. S.: Duodenal ulcer: Observation on 250 cases with special reference to types of stomach and the corresponding test meal findings, *Brit. M. J.*, 1:647, 1932.
51. Moynihan, B. G. A.: Observations on gastric and duodenal ulcer, *Practitioner*, 129:4, 1932.
52. Muller, Hugo: Geographic distribution of peptic ulcer, *Am. J. Surg.*, 23:497, 1934.
53. Medical Department of the United States Army in the World War, XV Statistics, Part II Med. and Casualty Statistics p. 98, 122, April 1, 1917-Dec. 13, 1919.
54. Norman, Jacob: Anthropological measurements as an aid in the diagnosis of peptic ulcer, *Med. Rec.*, 147:498, 1938.
55. Odom, C. B., and DeBakey, Michael: Acute perforated gastric and duodenal ulcer, *New Orleans M. & S. J.*, 92:359, 1940.

56. Oppen, Lincoln, and Zimmermann, H. M.: Ulcers of the digestive tract in association with the cerebral lesions, *Yale J. Biol. & Med.*, 11:49, 1938.
57. Palmer, W. L.: The stomach and military service, *J. A. M. A.*, 119:1155, 1942.
58. Payne, T. T., and Newman, C.: Interim report on dyspepsia in the Army, *Brit. M. J.*, 11:819, 1940.
59. Patricio, Ignacio, and Silva, J. A.: Studies on peptic ulcer, *J. Philippine M. Assoc.*, 20:699, 1940.
- 60A. Portis, S. A.: *Diseases of the Digestive System*, Philadelphia, Lea & Febiger, 1941. p. 478.
- 60B. Portis, S. A. and Jaffé, R. H.: Study of peptic ulcer based on necropsy records, *J. A. M. A.*, 110:6, 1938.
61. Rao, M. N.: Peptic ulcer in Northern Circars: A note on incidence, *Indian Med. Gazette*, 73:454, 1938.
62. Riecher, H. H.: The familial incidence of peptic ulcer, *Ann. Int. Med.*, 7:732, 1933.
- 63A. Rivers, A. B., and Ferreira, A. E. M.: Incidence and causes of chronic dyspepsia at various age groups: An analysis of 4,223 cases, *J. A. M. A.*, 110:2132, 1938.
- 63B. Robertson, H. E., and Hargis, E. J.: Duodenal ulcer: An anatomical study, *Med. Clin. N. Amer.*, 8:1065, 1925.
64. Robinson, S. C., and Brucer, M.: Body build of the male ulcer patient, *Am. J. Digest Dis.*, 7:365, 1940.
65. Saltzstein, H. C., Farbmann, A. A., and Sandweiss, D. J.: The sex incidence of peptic ulcer in children, *endocrinology*, 27:400, 1940.
66. Sandweiss, D. J., Saltzstein, H. C., and Farbmann, A. A.: Relation of sex hormone to peptic ulcer, *Am. J. Digest. Dis.*, 6:6, 1939.
67. Stewart, M. J.: Pathology of gastric ulcer, *Brit. M. J.*, 2:1021, 1923.
68. Streicher, M. H., and Kuehly, M. L.: Stomach; comparative analysis of gastric cases observed for period April 1925-April 1932, *Illinois M. J.*, 63:340, 1933.
69. Sander, Carl L.: Peptic ulcer, *South. M. J.*, 26:343, 1933.
70. Sturtevant, Mills, and Shapiro, L. L.: Gastric and duodenal ulcer, *Arch. Int. Med.*, 38:41, 1926.
71. Southland, C. G.: Duodenal ulcer: comparison of roentgenological and historical findings, *Radiology*, 8:111, 1927.
72. Thorlakson, P. H. T., and Hay, A. W. S.: Surgical management of gastric and duodenal ulcer, *Canadian M. A. J.*, 45:298, 1941.
73. Tice, Frederick: *Practice of Medicine*, Hagerstown, Md., W. F. Prior Co. Vol. VII, p. 475a-476a, 1940.
74. Urquhart, R. W. I., Singleton, A. C., and Feasly, W. R.: The peptic ulcer problem, *Canadian M. A. J.*, 45:391, 1941.
75. Vanderhae, A. R.: Histopathological changes in the nervous system in cases of peptic ulcer, *Arch. Neurol. & Psychiat.*, 4:871, 1939.
76. Walker, W. M.: Peptic ulcer, *Industrial Med.*, 11:106, 1942.
77. Walters, Waltman, and Snell, A. M.: Peptic ulcer as seen in Central Europe, *Proc. Staff Meet. Mayo Clinic*, 6:380, 1931.
78. Wilcox, P. H.: Gastric disorder in the services, *Brit. M. J.*, 1:1008, 1940.
79. Winklestein, Asher: A possible relationship between the ductless glands secreting the sex hormones and peptic ulcer, *J. Mt. Sinai Hosp.*, 7:29, 1940.
80. Weidinger, A.: The age and occupational incidence of gastric and duodenal ulcer, *Munchen. med. wchenschr.*, 87:882, 1940.
81. Wolfert, W. G.: A clinical study of peptic ulcer, *Med. Rec.*, 146:519, 1937.
82. Wright-Smith, R. J.: Peptic ulcer: An analysis of 218 cases studied at autopsy, *M. J. Australia*, 5:1027, 1937.



BUY 

UNITED STATES WAR

BONDS and STAMPS



NEW ORLEANS Medical and Surgical Journal

Established 1844

Published by the Louisiana State Medical Society under the jurisdiction of the following named Journal Committee:

C. C. deGravelles, M. D., Ex officio
For one year: Lucien A. LeDoux, M. D., Chairman
H. W. Kostmayer, M. D., Secretary
For two years: James K. Howles, M. D.
For three years: G. C. Anderson, M. D.,
Vice-Chairman
Leon J. Menville, M. D.

EDITORIAL STAFF

John H. Musser, M. D. *Editor-in-Chief*
Willard R. Wirth, M. D. *Editor*
Daniel J. Murphy, M. D. *Associate Editor*

COLLABORATORS—COUNCILORS

Edwin L. Zander, M. D.
J. T. O'Ferrall, M. D.
Guy R. Jones, M. D.
T. B. Tooke, Sr., M. D.
George Wright, M. D.
Rhett McMahon, M. D.
C. A. Martin, M. D.
W. F. Couvillion, M. D.
Paul T. Talbot, M. D. *General Manager*
1430 Tulane Avenue

SUBSCRIPTION TERMS: \$3.00 per year in advance, postage paid, for the United States; \$3.50 per year for all foreign countries belonging to the Postal Union.

News material for publication should be received not later than the eighteenth of the month preceding publication. Orders for reprints must be sent in duplicate when returning galley proof.

Manuscripts should be addressed to the Editor, 1430 Tulane Avenue, New Orleans, La.

THE JOURNAL does not hold itself responsible for statements made by any contributor.

THE NEW OFFICERS

Dr. Val H. Fuchs of New Orleans, the president-elect, becomes president for the coming year. The new president has had a distinguished career in the field of medicine and in the specialty to which he now limits his practice. He is a member of many local and national organizations, including the American Laryngological Society and is a diplomat of the National Board of Otolaryngology. As of now Dr. Fuchs is clinical professor of otolaryngology in the Louisiana State University School of Medicine, senior visiting otolaryn-

gologist at Hotel Dieu, and senior otolaryngologist at Charity Hospital. In addition to his accomplishments in his special field, Dr. Fuchs has been much interested in civic activities. He has headed the medical division of the Office of Civilian Defense and accomplished a beautiful job in organizing the City of New Orleans for possible catastrophies arising from the war. He has been active in several of the lunch service clubs. He has held numerous offices for the State Medical Society and in the Orleans Parish Medical Society of which he was president in 1935. He made an extremely efficient speaker of the House of Delegates until promoted to his present position. Dr. Fuchs will make a presentable and efficient president judging by his past accomplishments.

As president-elect Dr. Rhett McMahon of Baton Rouge was selected by the House of Delegates. Dr. McMahon has served organized medicine well and for some years has been councilor of the Sixth District.

As first vice-president Dr. Daniel J. Murphy will serve for the coming year. Dr. Murphy was chairman of the Committee on Arrangements and did a most efficient piece of work at the last meeting of the State Medical Society. He is at present secretary of the Orleans Parish Medical Society.

Dr. J. P. Sanders of Shreveport, well known to the doctors of Caddo Parish and well known throughout the state, was made second vice-president, and Dr. Philip H. Jones of New Orleans was selected as third vice-president in recognition of his services to the Parish and State Medical Societies.

The councilor of the First District for the next two years will be Dr. Edwin L. Zander, whose popularity and likeability is attested to by the fact that he is president of the Orleans Parish Medical Society. Dr. J. T. O'Ferrall was re-elected councilor of the Second District, as well as Dr. T. B. Tooke, Sr., of the Fourth District, and Dr. George Wright of the Fifth District. Dr. W. E. Barker, Jr., was selected to replace Dr. McMahon as councilor of the Sixth District. With this group of new councilors

plus the councilors who have already held office for one year we are confident that the affairs of the Society in the interim between the yearly meetings will be most successfully conducted.

As chairman of the House of Delegates, Dr. Andrew V. Friedrichs was unanimously chosen by the House and Dr. M. D. Hargrove was made the vice-chairman. Dr. Friedrichs has shown himself to be an excellent parliamentarian and a splendid presiding officer.

We are glad to report that Dr. Leon J. Menville is again selected to act as a delegate to the American Medical Association. Dr. Menville has held this position for some years, is very well known to the members of the House of Delegates of the American Medical Association and wields great influence in that body. Dr. Cassius L. Peacock, a past president of Orleans Parish Medical Society, was selected as Dr. Menville's alternate.

The elective committees will be made up of an unusually well selected group of men, who can be counted upon to advance the interests of the organization and to work diligently in its behalf. These committees are as follows:

Scientific Work—Dr. P. T. Talbot, Chairman; Drs. Edgar Hull and R. T. Lucas.

Public Policy and Legislation—Dr. O. C. Rigby, Chairman; Drs. H. A. Thomas and Walter Moss.

Journal—Drs. E. L. Leckert and C. G. Cole; both for a three year term.

Medical Defense—Dr. W. A. Ellender—three year term.

To the new president, the president-elect and other officers and committeemen recently selected by the representatives of organized medicine in Louisiana we offer our sincere congratulations. We know that always the State Society will be one of your paramount interests next year and that you will guide and lead efficiently.

SOCIALIZATION OF MEDICINE

Judging from the conversations with members of the State Medical Society at the recent successful meeting of the organ-

ization, one is struck by their reactions to the EMIC plan, the working of which scheme, to the minds of most doctors, illustrates well the difficulties that would arise were medicine to be socialized and placed under the control of some central authority in Washington. The criticisms were many and varied as brought out last month in the Organization Section of the Journal. Many of the criticisms were of minor moment but they at least indicated the irritation and the discomforts that, for various reasons, arose in the consummation of the plan. These annoying and troublesome details in doing what the medical profession consider a patriotic duty certainly suggest that if the entire practice of medicine or a goodly part of it was ruled by directives and orders from Washington the lot of the physician would be extremely unhappy.

The recent Chicago fiasco in which the Montgomery Ward plant was seized on the order, apparently, of bureaucrats from Washington, should afford an example to the laity of what might happen to this country were there further regimentation of the activities of the professions, as well as of business. The reaction to the Montgomery Ward seizure throughout the country was almost unanimously against the action of a group of bureaucrats in Washington who promptly turned tail and rescinded this action when the sentiment of the country was discovered. At the present moment, public sentiment does have something to say about things which are not directly connected with the war but does the socialization of our country continue to be gradually accelerated as it has in the past few years then very definitely public opinion will not make very much difference to the bureaucrats and overlords of Washington who, for the most part, have obtained their rank and status because they lack initiative, the ability to succeed in a business or profession and who are forced to take governmental jobs telling other people what to do and what not to do and making pretty much of a mess of everything.

When one stops to consider that the

Wagner-Murray bill provides for some billions of dollars to socialize medicine and when one stops to reflect that at least half of this money will go towards the payment of salaries and administrative expenses, one must of necessity feel that not only will a tremendous amount of money be wasted but that the necessarily enormous accretion to the ranks of the bureaucrats will bring untold mental misery to the medical profession. One can readily visualize the stream of orders and directives, often conflicting, that will pour forth from the official headquarters of a state controlled medical system. One can readily conceive of confusion that will occur in the practice of medicine and the tremendous difficulties that will be encountered by the medical profession in attempting to carry out the commands that will come forth from Washington.

PENICILLIN

Up until the present time penicillin has been produced in quantities only sufficient for the armed forces and for an occasional civilian. Now the mold is being grown in quantities sufficient to release a certain amount for civilian use. In New Orleans a group of hospitals have been allowed six million Oxford units for the use of patients who have infections which yield to penicillin treatment. This is a wise step because apparently at the present moment the Army is unable to use all that is supplied to them and some of the Army installations have stocks in excess of their needs and which have not been used prior to expiration date. As a limited amount of penicillin is now available it is well for the physician to acquaint himself with those conditions in which it is useful as well as methods of administration and dosage. In August, 1943, Dr. Chester S. Keefer of Boston, chairman of the Committee on Chemotherapy and Other Agents of the Division of Medical Sciences of the National Research Council, together with other members of the Committee, published a report of 500 patients treated with penicillin. In this report¹ the types of infection that will

yield to penicillin are mentioned as well as a discussion of the dosage schedule, together with an account of abnormal reactions which may occur with this form of treatment. In addition to this report, attention should be called to some of the information sent out by pharmaceutical houses. The Winthrop Chemical Company and E. R. Squibb for example, in January and May, respectively, of this year brought out annotated bibliographies which contained the articles on penicillin published up to that time. The most recent summary, a review of the literature on the use of penicillin, has just appeared in the May issue of the American Journal of the Medical Sciences.² These are sources from which information may be obtained by those who are not thoroughly familiar with the uses of this therapeutic agent nor the method of administration or dosage.

It may be recalled that in 1929, an Englishman, Fleming, noted that the growth of certain types of bacteria was inhibited by a mold *Penicillium notatum*. For some years this observation of Fleming went more or less unnoticed except by laboratory workers and then Florey and a group of his associates presented some very enthusiastic reports on the use of this mold, so enthusiastic that extensive investigations were begun in laboratories and clinics in most of the civilized countries. Reports that emanated from various investigators have been so dramatic that were it not for the difficulty in growing the mold and preparing it for medical usage almost every disease, infectious in nature, would probably be treated by this dried mold, but the results of carefully controlled investigations have shown that it is extremely effective only in certain types of infections, notably staphylococcic infections, certain of the coccal infections, especially pneumococcal and meningococcal diseases, as well as those due to *Streptococcus viridans*. Most of the bacillary infections are not susceptible to the action of the drug and in this group should be included *H. influenzae*. It has been found that penicillin will rapidly cure gonorrhea and in the treatment of

early syphilis it is remarkably effective, at least in the few instances that it has been employed.

Penicillin has been given by mouth but this method of administration is practically useless. Intramuscular injections are recommended for certain types of infections, such as local infections without bacteriemia and not unduly severe. It has been given also intraspinally, intranasally and has been most successful as a topical application. The method of choice, however, is to give penicillin by continuous, or practically continuous, intravenous administration. There are several reasons for this particular method of giving the preparation. Because of the very limited supply it would seem advisable to reserve its use in only severe infections which are not benefited to any great extent by other methods of administration. In these severe infections continuous intravenous drip is advisable because penicillin is very rapidly eliminated and it is advantageous to maintain a continuous blood level which cannot

be done by intramuscular injection. The continuous intravenous injection of penicillin may have to be kept up for some days, hence there are certain difficulties which are bound to arise when a needle is kept continuously in a vein and when the arm or leg has to be completely immobilized. However, when the patient begins to show definite improvement then it may be possible to resort to intramuscular injections until the cure is effected.

In this very short account of penicillin it has been impossible to detail more than an infinitesimal bit of the information that has been obtained by laboratory and clinical experimentation, so it would be advisable for the doctor to familiarize himself with some of the details of penicillin administration, hence two references have been given in this editorial where the information may be obtained.

1. Keefer, C. S., Blake, F. G., Marshall, E. K., Lockwood, J. S., and Wood, W. B.: Penicillin in the treatment of infections: A report of 500 cases, J. A. M. A., 122:1217, 1943.
2. Schmidt, G. F.: Penicillin, Am. J. Med. Sci., 207:661, 1944.

—0—

ORGANIZATION SECTION

The Executive Committee dedicates this page to the members of the Louisiana State Medical Society, feeling that a proper discussion of salient issues will contribute to the understanding and fortification of our Society.

An informed profession should be a wise one.

EMIC BRIEF

(Representing opinion of Louisiana State Medical Society for presentation to subcommittee on appropriations in Washington, April 28, 1944)

The following brief, prepared by a special committee on the Emergency Maternal and Infant Care Program, represents several months' experience in carrying out the program over the state and is the opinion of the House of Delegates as expressed by them and unanimously adopted on April 26. These facts were compiled after a thorough and liberal discussion by the delegates at the meeting.

"At the 1944 annual meeting of the Louisiana State Medical Society, held in New

Orleans April 24-26, the operation of the Emergency Maternity Infant Care program, since its adoption in the State of Louisiana, was aired. The following objections and criticism to the plan were voiced:

"1. When this plan was originally presented to the Louisiana State Medical Society, the membership objected to it because they felt that it was a step towards socialized medicine; rather than having themselves subsidized by the Federal Government, the medical profession were willing to take care of the families of non-commissioned men in the armed forces without charge, and even though the Louisiana State Medical Society adopted the plan, UNDER PROTEST, a number of physi-

cians have returned the checks which they received for their services, because they did not wish to commit themselves to this type of practice.

"2. The manner in which the physician, who accepts these cases, is paid for his services is unjust and unfair; he is paid only from the time the application is approved by the State Board of Health, and not from the date the patient makes application for this service, or the date on which he first sees the patient. This discrepancy tends to destroy the faith of the physicians, and as a result few, if any, desire to participate in the plan, thereby defeating the purpose of the plan—instead of offering the best medical care for the families of the non-commissioned men in the armed forces, as intended by Congress, the care is inadequate. And too specialists' fees are based on the same rate as the general practitioner—no allowance is made for his added experience and knowledge.

"3. The medical profession objects to this plan because it destroys the personal relationship which exists between patient and physician. The physicians of this state feel that the plan would operate more efficiently, and to the benefit of the wife and child of the serviceman if the allotment for this service were given to the wife (the same as her dependency allotment is made), and she be allowed to make her own personal arrangements with the physician and the hospital. Whether the patient uses this allotment to pay the physician or for some other purpose is a risk he is willing to take; he takes such a risk with his private patients.

"4. Most of these patients are transients; they make application for this service at the last minute and receive medical care from place to place. Sometimes they are seen only at the time of delivery; shortly after delivery they leave to follow their husbands, thereby making it impossible to give them postnatal care; the care in such cases is inadequate, and too under these circumstances the physician is unable to complete his case and collect the fee for his services.

"5. The obstetrician is responsible for the postpartal care for six weeks following the patient's delivery regardless of what conditions may exist after delivery; he is also responsible for the infant care for six weeks following delivery (in the case of private patients the babies are usually turned over to a pediatrician for follow-up). The physicians feel that it is not right that they should neglect their private practice and give these patients this attention for the inadequate financial remuneration they receive, especially so when the obstetrician does not give pediatric care.

"6. The pediatricians too feel that the care they are called upon to give these infants is too great for the small fees.

"7. In this part of the country the racial question has always been a difficult problem, therefore, the maternal and infant care for negroes under this plan proves to be a serious problem. To begin with the regulations of the plan provide that unless a patient is accepted in a hospital which is approved by the Children's Bureau, and ward reservations accepted as demanded by the Children's Bureau, they are not eligible for medical service under the plan. The hospital facilities for these people are not available.

"8. In a number of cases this same thing happens to white people. A physician may accept a patient under this plan, and when he tries to enter her into the hospital, which he is a member of, he learns that the hospital can not accept her because it has not been certified by the Children's Bureau. Such people are not eligible for service under the plan and as a result the physician receives no remuneration from the Children's Bureau for his services.

"9. In a great many instances some of these patients demand better service than is provided—they require semi-private or private rooms; and as a result, according to the stipulations of the plan in operation in this state, they are not eligible for hospital service under the Emergency Maternity Infant Care program. Despite the fact that such people can pay the hospitals for a private or semi-private room, the

physician must accept the small fee provided in the contract.

"In summary we feel that there are many minor regulations which tend to cause the plan to be thrown out because it shows bad faith on the part of the Government in enacting this plan, rather than their considering the conditions and well-being of the family of the non-commissioned man in the armed forces. Therefore, we offer the following resolutions with the request that they be presented to the Sub-committee of the House Committee on Appropriations:

Resolutions

"Whereas, Congress, in indicating their own feelings of gratitude towards men in the armed forces, undoubtedly express the sentiments of Congress and the country at large by the establishing of the Emergency Maternity Infant Care plan for the care of wives and babies of the non-commissioned men in certain pay grades of the armed forces; and

"Whereas, no objection was originally voiced from any medical organization to giving these people the best possible care, and same could have been administered without friction and with a maximum of efficiency if the American Medical Association and the various medical societies had been consulted in the origin of the plan; and

"Whereas, this has not been true because of the activities of the employees of the Children's Bureau; these activities being as follows:

"Premature publicity was carried on before the plan had been adopted in this state, apparently in an attempt to discredit with the public the profession and its members who were to render this care,

"Imposing the wishes of these employees upon the entire profession of the state and the Department of Health,

"In cases of disagreement between the medical profession and the Children's Bureau that they would refuse to put into operation the plan in the state unless it received the approval of the Children's Bureau, thereby forcing

the State Health Department to enforce the impartial ruling of the Children's Bureau in so far as the application of this plan,

"Also it has been brought to our attention that in some parts of the country (the State of Illinois for example) an attempt has been made to have these patients taken care of in charitable institutions and clinics by the appointed medical staff, thereby preventing the patients from having their choice of physician and hospital. The medical profession of Louisiana is strongly opposed to this being carried out in Louisiana.

"Whereas, there seems to be no assurance where the medical service under this plan will stop, as it was brought out in the last report of the American Medical Association that Junior Aviation Cadets and some of the personnel in the low commissioned grades would also be included in the plan at some later date; and

"Whereas, the evidence apparently indicates that the Children's Bureau seem to disregard the wishes of Congress and make little or no effort to cooperate with the medical profession, or the State Department of Health, but instead seek to, or at least, make no effort to avoid placing both in a bad light before the public; and,

"Whereas, the Children's Bureau is forcing in a bureaucratic manner, on the family of the men in the armed forces and the medical profession, their wishes in a dictatorial manner, rather than seeing that adequate care, as intended by Congress, is provided for women and babies of these men, and

"Whereas, the actions and policies of the Children's Bureau seem inimical to the best interests of the persons this program was designed to serve; therefore,

"Be it resolved, that the Louisiana State Medical Society express its disapproval of the conduct of the Children's Bureau and that Congress be petitioned to remove the Children's Bureau from further administration of this program and other programs of similar nature; and therefore,

"Be it further resolved, that the administering of care to wives and babies of non-commissioned men in certain pay grades of the armed forces be placed under the United States Public Health Service to be administered through the State Boards of Health with the cooperation of the medical profession; and therefore,

"Be it further resolved, that the allotment for these services be given to the wife of the man in the armed forces and she be allowed to make her own personal arrangements with the physician and hospital; and therefore,

"Be it further resolved, that Dr. C. C. deGravelles represent the medical profession of the State of Louisiana, and that he present these resolutions and the preamble to the Subcommittee of the House Committee on Appropriations and that he make the proper representation in order to have these various injustices corrected, and obtain better cooperation of this program so as to carry out the provisions for which this bill was originally created—to provide better maternal and infant care to the families of the non-commissioned men in the armed forces; and therefore,

"Be it further resolved, that the Executive Committee of the Louisiana State Medical Society send a copy of these resolutions with the preamble to the various congressmen from this state so as to inform them of the reactions of the medical profession of Louisiana with regard to the operation of this plan in this state."

Respectfully submitted,

E. L. Zander, M. D., Chairman,
H. B. Alsobrook, M. D., Member,
E. L. King, M. D., Member,

Special Committee from Committee on Maternal Welfare.

Our distinguished president at that time, Dr. C. C. deGravelles, had arranged previously for a hearing in Washington before the sub-committee on appropriations in the House of Representatives on the morning of April 28. He was very fortunate in being able to have such a representative document to submit to this committee. You should also know that this was carried out according to schedule, the brief was presented to the sub-committee, but unfortunately our protests and constructive suggestions for improvement of the service were not heeded by the committee, the House of Representatives or the Senate, and the bill for the appropriation for the continuance of the EMIC plan was signed by the President. This measure extended the service of the Children's Bureau and took care of \$6,000,000 deficit which had accumulated during 1944 and added \$22,000,000 for the same service up to the conclusion of the fiscal year June 30, 1945.

However, we must not be discouraged with this action of Congress, as we should all know that most of the appropriations for bureaus in Washington are very closely tied and interlocked with soldiers' benefits. In the present emergency the senators and representatives are very considerate of such legislation, for they feel to oppose it would place them in an unpatriotic position. It is believed that the principles as enumerated in this brief are very sound and should be the basis of our future considerations in the handling of any benefits for the enlisted men.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR OF MEETINGS

June 1	Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m. Executive Committee, Baptist Hospital, 8 p. m.	June 7	Clinico-pathologic Conference, Charity Hospital, 1:30 p. m. Clinico-pathologic Conference, Marine Hospital, 7:30 p. m. Mercy Hospital Staff, 8 p. m.
June 5	Board of Directors, Orleans Parish Medical Society, 8 p. m.		Society for Experimental Biology and Medicine, 8 p. m., L. S. U. Medical School, Room 410.
June 6	Eye, Ear, Nose and Throat Staff, 8 p. m.		

- June 12 Scientific Meeting, Orleans Parish Medical Society, 8 p.
- June 14 Touro Infirmary Staff, 8 p. m.
Women's Auxiliary, Orleans Parish Medical Society, Orleans Club, 3 p. m.
- June 15 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- June 16 I. C. R. R. Hospital Staff, 12:30 p. m.
- June 19 Hotel Dieu Staff, 8 p. m.
Clinico-pathologic Conference, Baptist Hospital, 8 p. m.
- June 20 Charity Hospital Medical Staff, 8 p. m.
- June 21 Clinico-pathologic Conference, Charity Hospital, 1:30 p. m.
Clinico-pathologic Conference, Marine Hospital, 7:30 p. m.
Charity Hospital Surgical Staff, 8 p. m.
- June 22 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
DePaul Sanitarium Staff, 8 p. m.
- June 27 Baptist Hospital Staff, 8 p. m.
- June 28 French Hospital Staff, 8 p. m.
- June 29 Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.
- June 30 L. S. U. Faculty Club, 8 p. m.
New Orleans Hospital Dispensary for Women and Children Staff, 8 p. m.

During the month of May the Society held two meetings—one regular scientific meeting and one special meeting. At the regular meeting, held May 8, the following program was presented: Case Report by Dr. Wm. B. Clark; Criteria for Adequate Control of Diabetes Mellitus by Dr. P. H. Jones, Jr.; and The Use of Globulin Insulin by Robert Katz.

The special meeting, held May 22, was in honor of the Past Presidents of the Orleans Parish Medical Society. The Past Presidents were introduced by Dr. Daniel J. Murphy, Secretary; Dr. Edwin L. Zander paid respect to the departed Past Presidents; and Dr. Waldemar R. Metz delivered the principal address. At the close of this meeting the pictures of the January 1, 1944 Sugar Bowl Game were shown.

NEWS ITEMS

Dr. Samuel B. Nadler has recently been certified by the American Board of Internal Medicine and has also been elected to fellowship in the American College of Physicians.

Dr. Robyn Hardy, who is now stationed in England, has been promoted to the rank of lieutenant colonel.

Dr. Joseph A. Danna recently returned from the Mayo Clinic, where he spent two weeks observing.

Dr. J. L. Dixon attended a meeting of the Missouri State Medical Society in Kansas City.

At the radio forum on socialized medicine conducted by the Tulane University Radio Forum over station WNOE, April 23, Dr. H. W. Kostmayer and Dr. Alton Ochsner, represented the negative side of the argument.

Dr. I. L. Robbins addressed the opening meeting of the thirty-seventh annual convention of the Benevolent Knights of America on April 14. His subject was the part to be played by fraternal organizations in the reconstruction of communal affairs after the war, and he was the principal speaker.

Dr. Emma Moss attended a special course in hematology conducted at the University of Ohio and sponsored by the American College of Physicians, April 17-24.

Dr. Neal Owens, Dr. D. C. Browne and Dr. Rawley M. Penick attended the annual meeting of the Arkansas State Medical Society at Little Rock.

Speakers at the twenty-eighth annual meeting of the Louisiana Conference of Social Welfare were Drs. Sam Nelken, T. A. Watters, and C. P. May.

Dr. Roger J. Mailhes was certified by the American Board of Genito-Urinary Surgery at its last meeting.

Dr. Alton Ochsner attended the meetings of the American Surgical Association and the Association of Thoracic Surgeons in Chicago, and later attended other meetings in Washington and in Jackson, Miss.

Dr. W. A. Sodeman spoke on the growing importance of heart disease at the ninety-first annual meeting of the New Orleans Academy of Sciences held in New Orleans in April.

Dr. Henry O. Colomb and Dr. Lewis Golden have been re-elected to the Board of Directors of the Louisiana Society for Mental Health.

Dr. Lucian H. Landry and Haidee Weeks have been elected to the Board of Directors of Kingsley House.

Dr. Emile A. Bertucci addressed a meeting of the Association of Orleans Parish Graduate, Undergraduate and Practical Nurses on the part nurses can play in the control of tuberculosis.

Dr. Oscar Bethea spoke on penicillin before the Louisiana Society of Hospital Pharmacists, May 8, at DePaul Sanitarium.

Daniel J. Murphy, M. D., Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

CALENDAR

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
East Baton Rouge	Second Wednesday of every month	Baton Rouge
Morehouse	Second Tuesday of every month	Bastrop
Orleans	Second Monday of every month	New Orleans
Ouachita	First Thursday of every month	Monroe
Rapides	First Monday of every month	Alexandria
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	
Shreveport	First Tuesday of every month	Shreveport
Vernon	First Thursday of every month	

REPORT OF THE HOUSE OF DELEGATES TO THE GENERAL ASSEMBLY OF THE LOUISIANA STATE MEDICAL SOCIETY—1944

The House of Delegates held two sessions during the 1944 meeting of the State Society, in New Orleans.

There were 73 delegates, 13 past presidents (1 included in officers) and 15 officers present.

Minutes of the 1943 meeting of the House of Delegates and of meetings of the Executive Committee held since the 1943 meeting were adopted as published in the report sent to all members of the House.

Recommendations Contained in Reports:

President—1. We most earnestly recommend that the Orleans Parish Medical Society, in conjunction with the President of the Louisiana State Medical Society send a joint committee to Washington, D. C. to consult with and to interview the Louisiana Senators and Congressmen individually and collectively regarding Senate Bill 1161, requesting of them their wholehearted cooperation in defeating this bill whenever and wherever it may bob up in either the Senate or House, and to obtain from them, individually and collectively a definite commitment as to whether they will uphold organized medicine as it exists at the present time, or whether they will vote for the passage of this bill, thus destroying all progress made by our profession for the good of the public throughout the past centuries.—Approved. 2. I would like to recommend the establishment of a central bureau in Washington, D. C. sponsored by the American Medical Association. This to be a two-way committee, taking information from the state to Washington, and bringing back to us information developing in Washington from time to time on important medical subjects, legislation, and so on.—Approved.

Committee on Cancer—1. To reaffirm the activities of the Cancer Committee.—Approved. 2. That the Secretary-Treasurer write letters of appreciation to the editors of the New Orleans,

Baton Rouge, Lake Charles, Monroe, Alexandria and Shreveport newspapers for articles published on cancer; also to the managers of broadcasting stations in these centers for the generous allocation of time to members of the profession and Field Army officers.—Approved. 3. That a letter of thanks be sent to Dr. David E. Brown, Director of the Louisiana State Department of Health for the donation of space in the New Orleans Medical and Surgical Journal for the publication of monthly articles on the subject of cancer.—Approved. 4. That a letter be sent to the Louisiana Division of the Women's Field Army commending them for having worked so courageously, persistently, and intelligently in our war on cancer.—Approved.

Committee on Maternal Welfare—1. That the State Society take up with the Children's Bureau, or whatever agency is necessary, to have some of the objections the doctors have found in the operation of this plan (EMIC) corrected at its source, in order to make the plan less objectionable and obtain the full cooperation of the practicing physicians throughout the state and the country.—Approved.

Committee on Mental Health—1. Suggestion that the intense congestion of the two state mental hospitals be alleviated by the construction of a third state mental hospital, preferably located near the Parish of Orleans.—Approved.

Committee to Investigate the Subject of a Corresponding Library for Members of the Society—1. That the House of Delegates continue this committee for further work, to report to the Executive Committee in the next year.—Approved.

Louisiana State Board of Medical Examiners.—1. That Dr. L. J. Menville be recommended to the Governor for reappointment on the Board.—Motion was made and carried that Dr. Menville, Dr. A. V. Friedrichs and Dr. Val H. Fuchs be recommended for this appointment.

Committee on Resolutions—1. That a copy of these resolutions be incorporated in the minutes of the meeting, a copy be sent to the Bulletin of the Orleans Parish Medical Society and a copy pub-

lished in the New Orleans Medical and Surgical Journal.—Approved. 2. That the House of Delegates express its deepest sympathy to the bereaved family of Dr. A. W. Martin and that a copy of the resolutions in re his death be sent to his family.—Approved.

The following reports, which contained no recommendations, were accepted: Committee on Secretary-Treasurer's Report; Council; Councilors of First, Second, Third, Fourth, Fifth, Sixth, Seventh and Eighth Districts; Committees—Advisory to Woman's Auxiliary, Care of Indigent Physician, Hospitals, Journal, Medical Defense, Medical Education, Medical Testimony, Nutrition, Public Policy and Legislation, Scientific Work, To Prepare History of L. S. M. S. and Water Reed Memorial.

Communications:

Communication from the Orleans Parish Medical Society which included a copy of the report of the Public Policy and Legislative Committee of that Society was received and filed.

Communication from the South Carolina Medical Association concerning reallocation of delegates to the A. M. A. was received and filed.

Resolutions:

In re articles approving the Wagner-Murray-Dingell Bill which recently appeared in the bulletin of the Louisiana Parent-Teacher Association.—Adopted. This resolution carried the recommendation that effort should be made to acquaint all members of the Louisiana Parent-Teacher Association as to what the meaning of these articles really is and that every effort possible be made to have this subject discussed at the convention of the Louisiana Parent-Teacher Association on May 3 and 4 in New Orleans by some of the delegates of the Louisiana State Medical Society. It was brought out in the discussion of this subject that the parent-teacher associations in some localities are not properly informed on such subjects and the doctors should appear before these groups and advise them concerning same, which is the duty of every doctor in every community.

In re voluntary, non-profit, pre-payment type medical service.—Motion was made and carried that a special committee, as outlined in this resolution, be appointed and report to the Executive Committee which in turn will report to the House of Delegates for final approval; if necessary a special meeting of the House of Delegates to be called for such action.

In re efforts of Chambers of Commerce against subsidizing all forms of business and profession, including the medical profession.—Approved. It was recommended in this resolution that members of the State Society be urged to join their local Chambers of Commerce.

In re prescription writing.—Approved. This resolution contained the recommendation that this

be referred to the Committee on Medical Education.

Amendments:

Motion was made and carried that Section 5 of Chapter VIII of the By-Laws be amended to state that the Budget and Finance Committee shall make a report to the House of Delegates.

Motion was made and carried that Section 1 of Chapter IX of the By-Laws be amended to read.—“Of the amounts collected, one dollar (\$1.00) per capita shall be set aside as an annual entertainment fund.”

Special Order:

Dr. Carl Peterson, representing the Council on Industrial Health of the A. M. A. was present and was given the privilege of the floor. He commented on the work being done by the Council.

The Emergency Maternal and Infant Care Program was discussed and a special committee, appointed by the president, presented a brief on this subject which was accepted.

Motion was made and carried that the Executive Committee at their first meeting appoint a Committee on Nominations to select members of committees to be elected by the House.

Motion was made and carried that the president appoint a committee to investigate the Association of American Physicians and Surgeons and make a report to the Executive Committee and let the Executive Committee determine whether this organization is worthwhile and so advise the members of our organization.

Motion was made and carried that the incoming president appoint a committee to go over the Charter, Constitution and By-Laws of the State Society, details to be worked out with the Executive Committee and acted upon at the next meeting of the House of Delegates.

Election of Officers:

Dr. Rhett McMahon, President-elect; Dr. Daniel J. Murphy, First Vice-President; Dr. J. P. Sanders, Second Vice-President; Dr. P. H. Jones, Third Vice-President; Dr. Edwin L. Zander, Councilor First District; Dr. J. T. O'Ferrall, Councilor Second District; Dr. T. B. Tooke, Sr., Councilor Fourth District; Dr. George Wright, Councilor Fifth District; Dr. W. E. Barker, Jr., Councilor Sixth District; Dr. A. V. Friedrichs, Chairman House of Delegates; Dr. M. D. Hargrove, Vice-Chairman House of delegates; Dr. L. J. Menville, Delegate to A. M. A. 1945 and 1946; Dr. C. L. Peacock, Alternate to Delegate to A. M. A. 1945 and 1946.

Committees:

Scientific Work—Dr. P. T. Talbot, Chairman, Drs. Edgar Hull and R. T. Lucas.

Public Policy and Legislation—Dr. O. C. Rigby, Chairman; Drs. H. A. Thomas and Walter Moss.

Journal—Drs. E. L. Leckert and C. G. Cole; both for a three year term.

Medical Defense—Dr. W. A. Ellender—three year term.

1945 Meeting:

Motion was made and carried that place of the next meeting be left to the discretion and decision of the Executive Committee.

REPORT OF COMMITTEE ON RESOLUTIONS

Whereas, the Louisiana State Medical Society has enjoyed a very outstanding and successful meeting, and

Whereas, the success of this meeting is due to the zealous and untiring efforts and splendid cooperation of several individuals and organizations,

We, therefore, offer the following resolutions of cooperation:

First, To Dr. Daniel J. Murphy, General Chairman of the Committee on Arrangements, for his generous and untiring efforts which have contributed greatly to the success of the meeting.

Second, To the Orleans Parish Medical Society, host of the meeting, for their splendid cooperation and the excellent manner in which the convention was conducted.

Third, To the efficient staff of the Secretary-Treasurer's office and the Secretary-Treasurer whose careful preparation of the details of the meeting contributed much to its smooth operation.

Fourth, To Dr. A. V. Friedrichs, Acting Chairman of the House of Delegates, for the efficient and orderly manner in which he conducted the meeting of the House of Delegates.

Fifth, To the Woman's Auxiliary of the Louisiana State Medical Society whose wholehearted support and interest added considerably to the meeting.

Sixth, To the commercial exhibitors whose splendid displays greatly enhanced the excellence of the meeting.

Seventh, To the press of New Orleans for their interest and assistance in giving space for news of the meeting and of various personages in attendance.

Eighth, To Mr. Roy Bartlett, Convention Director, the personnel of his office, and the Roosevelt Hotel for the many courtesies extended and for their cheerful and willing attention to the innumerable calls for assistance.

Ninth, To the Association of Commerce for their invaluable assistance at the registration desk.

Tenth, To the members of the State Society who attended the meeting and whose interest and enthusiasm made the meeting a success.

We recommend that a copy of these resolutions be incorporated in the minutes of the meeting, a copy be sent to the Bulletin of the Orleans Parish Medical Society and a copy published in the New Orleans Medical and Surgical Journal.

REPORT OF COMMITTEE ON MEDICAL DEFENSE

In May, 1943 a case brought against a Shreveport member was referred to the Committee on Medical Defense. After review of the material submitted, all data were turned over to the attorney.

The attorney advised the chairman, in October, 1943, that exceptions had been filed on technical grounds to the petition submitted in the case against a New Orleans doctor, referred to the committee in October of the same year.

Advice was received from the attorney, in May, 1943, that the case against a New Orleans doctor submitted in February, 1938 had been dismissed.

Financial report of the Medical Defense Fund, indicating amount in the savings and trust fund on January 1, 1944 is in the files of the Society.

S. Chaillé Jamison, M. D., Chairman.

ANNUAL MEETING REGISTRATION

The registration at the 1944 annual meeting of the Louisiana State Medical Society in New Orleans, April 24-26, was as follows:

Members	389
Guests	36
Students and Interns.....	178
Exhibitors	49
Total	652

MEMBERSHIP STATUS OF PHYSICIANS IN STATE IN 1943

Parish	Registered (Eligible)	Members	Non-Members
Acadia	27	20	7
Allen	8	8 (1 inactive)	—
Ascension	11	9	2
Assumption	13	11	2
Avoyelles	20	17	3
Beauregard	8	4	4
Bienville	12	2	10
Bossier	14	5 (1 at large)	9
Caddo	206	157	49
Calcasieu	50	39	11
Caldwell	6	4	2
Cameron	4	1	3
Catahoula	5	3	2
Claiborne	12	9	3
Concordia	10	7	3
De Soto	12	10	2
East Baton Rouge..	123	101	22
East Carroll	5	4	1
East Feliciana	18	14	4
Evangeline	10	4	6
Franklin	16	11	5
Grant	8	3	5
Iberia	21	19	2
Iberville	15	13 (1 honorary)	2
Jackson	10	5 (1 at large)	5
Jefferson	17	16	1
Jefferson Davis	12	11	1
Lafayette	38	31	7
Lafourche	20	19	1

La Salle	11	7	4
Lincoln	13	12	1
Livingston	6	2	4
Madison	11	8	3
Morehouse	14	12	2
Natchitoches	18	7	11
Orleans	911	627 (2 honorary) (1 at large)	284
Ouachita	70	54	16
Plaquemines	6	5	1
Pointe Coupee	7	6	1
Rapides	85	68 (3 inactive)	17
Red River	10	8	2
Richland	15	9	9
Sabine	12	10	2
St. Bernard	1	1	—
St. Charles	7	5	2
St. Helena	2		2
St. James	6	3	3
St. John	10	6	4
St. Landry	29	23	6
St. Martin	8	8	—
St. Mary	16	16	—
St. Tammany	17	13	4
Tangipahoa	31	22	9
Tensas	4	2	2
Terrebonne	15	13	2
Union	8	5	3
Vermilion	16	11	5
Vernon	12	5	7
Washington	16	13 (1 inactive)	3
Webster	27	20	7
West Baton Rouge..	5	3	2
West Carroll	10	5	5
West Feliciana	3	3	—
Winn	5	3	2
	2,168	1,572	596
Intern Members 1943-44..		20	
		1,592	

supply of practitioners is not cut off wholly at the source. The Directing Board, of course, will continue to work on this problem."

THE NEW ORLEANS GRADUATE MEDICAL ASSEMBLY

The following members were elected to office for the year 1944-1945:

Dr. Henry W. E. Walther.....	President
Dr. William H. Gillentine.....	President-elect
Dr. L. C. Chamberlain.....	First Vice-president
Dr. John R. Schenken.....	Second Vice-president
Dr. Curtis H. Tyrone.....	Third Vice-president
Dr. Edwin H. Lawson.....	Treasurer
Dr. Joseph S. D'Antoni.....	Secretary
Dr. Joseph W. Reddoch.....	Director of Program
Dr. Rena Crawford.....	Ass't Director of Program
Dr. H. Ashton Thomas.....	Ass't Director of Program
Executive Committee—Dr. Oscar W. Bethea, Dr. Frederick F. Boyce, Dr. Donovan C. Browne, Dr. B. I. Burns, Dr. Dean H. Echols.	

GALLERY OF PORTRAITS OF EDITORIAL STAFF OF THE JOURNAL

We regret that credit was not given to Dr. Rudolph Matas, Chairman of the Committee on History of the Louisiana State Medical Society, for collecting the photographs of the past editors of the New Orleans Medical and Surgical Journal, published in last month's issue of the Journal. Were it not for this important active committee of the State Medical Society it would have been impossible to print these photographs which took many years and much trouble in collecting.

FRANKLIN PARISH MEDICAL SOCIETY

At the February meeting of the Franklin Parish Medical Society, the following officers were elected: President, Dr. L. F. Robinson; Vice-President, Dr. J. D. Rogers; Secretary-Treasurer, Dr. A. J. Reynolds, all of Winnsboro; Delegate, Dr. Henry Jones, Wisner.

NEWS ITEMS

Dr. Urban Maes, Director of the Department of Surgery, and Dr. James D. Rives, Clinical Professor of Surgery, attended the annual meetings of the American Surgical Association and the American Association for Thoracic Surgery, held in Chicago May 3-6. Dr. Lawrence O'Neil, Clinical Instructor in Surgery, accompanied them as their guest.

SELECTIVE SERVICE SITUATION UNCHANGED

According to the "News" published by the War Manpower Commission, under date of May 11, 1944, the following statements are made relative to the deferment of pre-professional students: "No change has yet taken place in the Selective Service policy eliminating deferments of pre-professional students who would otherwise enter professional schools after July 1. Letters received from Chairmen commenting on Directive #344, Deferment of Pre-Professional Students, quoting a letter from the Selective Service Director, show a clear consensus on the need for modification of the existing deferment policy to make sure that the future

Dr. Roland Young of Covington, La., recently returned after an absence of eight months. He was the senior physician on the male service in the Taunton State Hospital just out of Boston in Massachusetts. While there he was made a member of the Massachusetts Psychiatric Society.

Mr. Bernard M. Baruch has given the sum of \$1,100,000 for the use of teaching of and research in physical medicine. Part of this sum goes to Columbia University College of Physicians and Surgeons, part to the New York University College of Medicine and another part to the Medical College of Virginia. This money is given by Mr. Baruch because of his interest in the subject and

more particularly because he believes that physical medicine will play a very distinct role in the rehabilitation of the wounded and ill men discharged from the armed services.

The Eye, Ear, Nose and Throat Hospital has been left a legacy of \$1,000,000 by the will of Mrs. George Spencer Eastwick. Mr. Charles E. Fenner, president of the Hospital, announces that the bequest provides for an additional wing adjoining the present building. Priorities will not permit of the immediate construction of this additional wing.

War Manpower Commission has issued a statement to the effect that physicians past the age for Army or Navy service or physically disqualified for active duty, will be able to obtain commissions for assignment to duty at the Veterans Administration as result of a recent agreement reached by the Procurement and Assignment Service of the Army and Navy and the Veterans Administration. Further information concerning this may be obtained from Dr. C. G. Cole, state chairman for physicians.

The American Congress of Physical Therapy will hold its twenty-third annual scientific and clinical session September 6, 7, 8 and 9, 1944, inclusive, at the Hotel Statler, Cleveland, Ohio.

Dr. W. T. Wootton, Hot Springs National Park, Arkansas, was elected President-Elect of the Southern Medical Association at the Richmond meeting in November 1942 and was installed President at the meeting in Cincinnati last November. Dr. Wootton died at St. Luke's Hospital in St. Louis of an embolism on Tuesday evening, May 2.

LOUISIANA TUBERCULOSIS ASSOCIATION

To Board Members, Parish Associations, Committees and Physicians:

The attached resolution was unanimously adopted at the recent annual meeting of the Louisiana Tuberculosis Association in New Orleans.

In connection with the resolution we quote below the item (No. 5 of Sec. 2A) in Act 364 which has to do with tuberculosis facilities:

"5. Not less than the sum of Five Hundred Thousand (\$500,000) for the construction of four (4) one hundred (100) bed hospitals for the treatment of pulmonary tuberculosis, to be located at such places as may be designated by the United States Public Health Service."

Act 364, you will recall, was the joint resolution of the special session of 1942 calling for an amendment to the Constitution and was carried by a large majority vote in the general election of November 3, that year.

It is urgent now that the legislature:

(1) appropriate sufficient funds to secure adequate trained personnel for the full use of beds available at Greenwell Springs for the treatment of early cases, and

(2) provide custodial care for those patients with infectious, chronic tuberculosis not suitable for hospital treatment. Funds should be found to equip, staff and maintain such hospitals at convenient points throughout the state.

Will you please use your influence to this end with all senators and representatives in your area? Prompt provisions of such facilities will do much toward the control of tuberculosis in our state. We hope all TB secretaries will see that a copy of this resolution reaches every editor in your parish.

Whereas: the State of Louisiana has insufficient hospital beds in use for the care of known cases of active tuberculosis, and

Whereas: the Selective Service examinations and the Department of Health diagnostic facilities are discovering many more cases of tuberculosis needing immediate hospital care.

Be it resolved: That the Louisiana Tuberculosis Association urge the Governor, other state officials and the Legislature to provide more adequate care for tuberculosis at once by

1. Providing not only funds but also personnel to utilize Greenwell Springs Tuberculosis Hospital to capacity.

2. Providing funds to equip, staff and maintain hospitals for the custodial care of cases of infectious, chronic tuberculosis in every part of the state in completion of the plan authorized in the Constitutional Amendments of 1942.

TOURO INFIRMARY

The regular monthly meeting of the Medical Staff was held on May 10 at 8 o'clock. There were four scientific presentations, three of which were unusual cases that occurred in the hospital. The first of these was an instance of periarteritis nodosum presented by Dr. F. C. Coleman. Dr. I. A. Levin presented case reports on remnants of the cystic duct following cholecystectomy. Dr. George Susdendal discussed the use of pyridoxine hydrochloride in obstetrics. Dr. E. M. Weinshel presented a case of multiple myeloma.

SOUTHERN BAPTIST HOSPITAL

The regular monthly meeting of the Southern Baptist Hospital will be held on Tuesday, May 2, being postponed one week on account of the meeting of the Louisiana State Medical Society. The first presentation was a movie on the treatment of polycystic kidneys, comments being made by Dr. E. A. Ficklen. The next matter of scientific interest was a review of cases treated with penicillin by Dr. R. K. O'Neal and Dr. L. I. Tyler.

CORRESPONDENCE

San Francisco, Calif.,
April 27, 1944.

Louisiana State Medical Society,
Office of Secretary-Treasurer,
1430 Tulane Ave.,
New Orleans, La.
Dear Dr. Talbot:

Sincerely appreciate your sending my 1944 membership card. Have also been enjoying the issues of the Journal, for which I am indeed grateful. We, "destroyer doctors", (when our ships are as lucky (or blessed) as ours has been), have only a small amount of medical work to keep us on our toes. Our people stay wonderfully healthy and we've escaped with few injuries, for which we are plenty happy; in that way, they are by all means best "fit to fight". Reading thus becomes pretty important, and I know that the articles in the Journal will stand me in good stead.

Pardon the tardiness of this acknowledgment of receipt of a membership card, and again, thanks very much for the card and the Journal.

Sincerely,
W. H. Harris, Jr., M. D.

Washington, D. C.
April 27, 1944.

Dr. J. H. Musser, Editor,
New Orleans Medical and Surgical Journal,
1430 Tulane Avenue,
New Orleans, Louisiana.
My Dear Dr. Musser:

The National Naval Medical Center of Bethesda, Maryland, is endeavoring to collect for its archives a complete set of commissions issued to Naval medical officers, and signed by past Presidents of the United States.

There is a small nidus now at the Center and it is hoped to be able to build this up to completion. Through the Navy Department Library and the National Archives a few more have been located. I am wondering whether you would care to insert a small item in your "Journal" to this effect, with the idea that various libraries or individuals may have in their possession such old commissions and would be willing to turn them over to the Center. If such are found and the owners are so generous, there could be no more fitting enshrinement of them than their use for this purpose.

Any assistance that you and the "Journal" can extend will be greatly appreciated by the Surgeon General.

With best regards.

Very truly yours,
Robert C. Ransdell,
Commander, (MC), USNR,
Division of Publications.

HEALTH OF NEW ORLEANS

The Bureau of the Census, Department of Commerce, reported that there occurred in New Or-

leans the week ending April 15, 117 deaths, divided 74 white, 43 colored. In this week there were only two children under one year of age who died. The following week ending April 22 there were 125 deaths, divisioned 72 white, 53 non-white, with 13 infant deaths. For the week which closed April 29 there was rather a sharp increase in the number of deaths in the city, 162 New Orleanians expiring in this particular week, 108 of whom were white and 54 were colored. There was an increase also in the infant deaths, with 18 small babies dying. For the week which terminated May 6 there was a sharp decrease in the number of deaths in the city. There were 79 white people who died and 52 colored for a total of 131, with only six infant deaths. The next week ending May 13 there were 139 deaths, divided 82 white, 57 non-white, and 10 infants.

INFECTIOUS DISEASES IN LOUISIANA

The Louisiana State Board of Health reported that for the week ending April 8 a large number of measles cases reported, 336, indicated a mild epidemic of this disease. Other diseases reported in numbers greater than 10 were 67 of influenza, 61 of mumps, 20 of pulmonary tuberculosis, 12 each of chickenpox and meningitis. There were also reported 11 cases of malaria and 15 of unclassified pneumonia. One case of poliomyelitis was discovered this week appearing in Jefferson Parish. Most of the mumps cases were reported from military sources. Measles was still rampant in the following week which closed April 15, as there were 194 cases listed. In order of frequency this disease was followed by 51 cases of mumps, 43 of pulmonary tuberculosis, 12 of pneumonia, and 19 of whooping cough. Eleven of the measles cases and 15 of the mumps were reported from military sources. For the week ending April 22 the incidence of measles diminished, there being only 116 cases being reported this week, followed by 57 of pulmonary tuberculosis, 51 of mumps, 33 of hookworm infestation, 21 of chickenpox, 18 of meningitis and 13 of malaria. There were also reported 17 cases of unclassified pneumonia. One case of poliomyelitis was reported this week. The week ending April 29 was the week in which the venereal diseases were recorded. Aside from these measles led other reportable diseases with 103 cases, followed by 46 of pulmonary tuberculosis, 44 of mumps, 36 of chickenpox, 13 of German measles and 10 of malaria. Of the venereal diseases for the four week period there were 1,473 cases of syphilis listed, 1,445 of gonorrhea, 60 of chancroid. Four hundred and four of the cases of gonorrhea, 115 of the cases of syphilis, and 39 of chancroid were from military sources. This week also saw the reporting of four cases of poliomyelitis. The mild epidemic of measles was still continuing for the week ending May 6, as in this week there were reported 123 cases, followed by 31 of mumps, 26 each of pulmonary tuberculosis and malaria, 23 of pneumo-

coccie pneumonia, 32 of unclassified pneumonia, 19 of chickenpox, and 12 of septic sore throat. One case of smallpox was reported from Lafayette Parish in this week.

RESOLUTIONS OF RESPECT

Whereas, That beneficent power that stands beyond the dim unknown keeping watch above His own, did see fit on February 27, 1944, to take from his labors that faithful doctor and "good physician", Dr. George W. Gaines of Tallulah, La., did call him to sleep, to escape from himself, and to rest from the burdens he had carried for his fellow man for eighty-odd years, and did permit him in the fullness of an eventful life, to depart as a candle burnt out, and

Whereas, Our absent friend was not only a faithful husband, a good parent, but a model citizen, who was a forceful exponent of all that was good, and in his struggle upward for honorable recognition and to imminent positions in response to the voice of ambition, trampled not upon the prostrate forms of the less fortunate, but, in good samaritan faith, lifted them and helped them to find the highway that makes sure a safer journey, and

Whereas, Doctor Gaines was an honorary member of the Issaquena-Sharkey-Warren Counties Medical Society of Mississippi for many years and was most punctual in attendance, contributing invaluable experiences and erudite professional knowledge, enhancing the prestige, dignity, and services of this society,

Therefore, be it Resolved, that we, the composite membership of the society, take note of his abiding absence and our irretrievable loss, not by a futile recount of days and hours and years and joys that are irrevocably past, but, in keeping with his high ideals of life, rededicate the remaining years of our life to a greater service in the profession he loved so well, served so faithfully, with an enthusiasm and wisdom possessed only by great and magnanimous souls,

Be it Further Resolved, That a copy of these resolutions be spread upon the minutes of this society, that copies be sent the press of Vicksburg and Tallulah, and to the New Orleans Medical and Surgical Journal and Mississippi Doctor and that a copy be sent to his family that they may know our sympathy and appreciation abides with them.

Geo. M. Street

Guy Jarratt

F. Michael Smith

Committee on Resolutions.

DR. ROBERT W. COOPER

(1897-1944)

Dr. Robert Williams Cooper, of Shreveport, born October 1, 1897, was graduated from the University of Pennsylvania, School of Medicine in 1923. He was a member of the Radiological Society of North American, and American College of Radi-

ology. He was a specialist certified by the American Board of Radiology; a radiologist at the Shreveport Charity Hospital and the T. E. Schumpert Memorial Sanitarium; and secretary of the Shreveport Clinic. He died in Galveston, Texas, March 13, 1944.

DR. J. SAUTER MULLER

(1884-1944)

Dr. J. Sauter Muller of New Orleans died May 19 at Hotel Dieu. Dr. Muller led an active busy life in New Orleans. He was a veteran of the first war and for many years was physician at one of the big hotels in the city. He was a man universally liked and his death will leave a vacancy in the medical profession of New Orleans.

WOMAN'S AUXILIARY

REPORT OF THE ANNUAL MEETING OF THE WOMAN'S AUXILIARY TO THE LOUISIANA STATE MEDICAL SOCIETY

Wartime restrictions prevailing, the Woman's Auxiliary to the Louisiana State Medical Society nevertheless attracted a sizable gathering at its annual meeting held April 24, 25, and 26 at New Orleans, with headquarters in the Roosevelt Hotel. With the gracious personality of Mrs. George Taquino presiding, business and social arrangements were smoothly handled.

Dr. and Mrs. Taquino were hosts at a pre-convention evening party honoring Mrs. John Pierpont Helmick, president of the Woman's Auxiliary to the Southern Medical Association, and Mrs. Rhodes Spedale, president-elect of the Louisiana Auxiliary. Mrs. Eben J. Carey, president of the Woman's Auxiliary to the American Medical Association, who was also to have been an honoree, was unable to keep the commitment previously arranged with the convention committee.

The general session was opened at 9:30 a. m. on April 25, war-time crowding necessitating using a meeting room which had to be vacated before the noon hour. War conditions were indeed the keynote of the meeting from the moment of the invocation by Reverend John W. Hynes, S. J. With her restricted time, with a number of delegates and even presidents of the parish societies absent, Mrs. Taquino handled the situation masterfully. Each individual on the program was granted ample opportunity to present his or her important message to the gathering.

Following the official address of welcome from Mrs. John S. Dunn, president of the Woman's Auxiliary to the Orleans Parish Medical Society, and the response by Mrs. Charles M. Horton of Franklin, greetings were extended to the ladies by Drs. Edwin L. Zander, C. C. de Gravelles, Daniel J. Murphy, and Val H. Fuchs. The men stressed the importance of opposing the Wagner-Murray

Bill, and the part the auxiliary could play in the presentation of adverse material to the various lay women's groups.

The president of the Woman's Auxiliary to the Southern Medical Association is a dynamic individual. With her dual presidency embracing direction of the West Virginia group as well, she was in a position to transmit many pertinent suggestions to leaders and members.

A dignified and stirring "In Memoriam" for members of the auxiliary who have passed on since the last meeting was offered by Mrs. S. M. Blackshear of New Orleans. During the ceremony of presentation of a bouquet of American Beauty roses honoring these departed members, Mrs. Walter C. Hava sang beautifully and appropriately, accompanying herself. Tiny Penelope Matthews Martin and Mitylene Parham, descendents of New Orleans physicians, carried the offering and presented them to their chair. Reverend Shardon D'Aubret offered the benediction for the occasion.

The business meeting which followed was expeditiously handled. Following the reading of minutes of the last annual meeting, Mrs. Taquino delivered an able summary of her busy presidency. Parish presidents, who found it convenient to attend the state meeting, presented in person a report of their activities. The reports of the absentees were gratefully accepted and placed on file in the records of the auxiliary. An amazing amount and variety of work was accomplished by Auxiliary members who found their days filled with activities.

"Hold fast to your identities as auxiliaries and do not allow your members to dissipate their forces away from the medical profession" was the message sent by Mrs. Eben J. Carey as president to the Woman's Auxiliary to the American Medical Association. Mrs. Edwin R. Guidry of New Orleans delivered the report in Mrs. Carey's absence. Mrs. Wiley R. Buffington, who attended the meeting of the Woman's Auxiliary to the Southern Medical

Association, brought back a full and animated report for the guidance of Louisiana members.

General discussion providing ways and means for the carrying out of the ambitious program of combating the Wagner-Murray legislation as admonished by the officers of the parent organization, and as outlined in Mrs. Helmick's suggestions, enlivened the period for new business. The installation of Mrs. Rhodes Spedale of Plaquemine and her cohorts inaugurates an eventful year.

Mrs. Arthur A. Herold of Shreveport installed the new officers with a grave seriousness worthy of the dignity of the group and the profession they represent.

Mrs. Spedale finds herself at the helm in a period pregnant with implications for the future of American medicine on the post-war horizon. "The Women's Auxiliaries of both state and parish must remain uninvolved in other considerations to the extent that they do not forget the main objective for which they have been organized", was the greeting of the president, and under such administration an optimum amount of help and advancement to the medical cause may be expected.

Much credit for the smooth efficiency of convention proceedings can be accorded to the parallel qualities of Mrs. Carroll F. Gelbke of Gretna, general chairman on arrangements, and her able assistants, Mrs. C. Grenes Cole and Mrs. Roy B. Harrison of New Orleans. The honorary committee included Mesdames Edwin L. Zander, George J. Taquino, John S. Dunn and C. C. de Gravelles. The chairmen of sub-committees also most ably handled their commitments.

A beautifully appointed tea held at the Patio Royale in the romantic French quarter and honoring the new president terminated the official proceedings of the convention.

Respectfully submitted,

Mrs. Edwin R. Guidry,
Chairman of Press and Publicity

BOOK REVIEWS

Principles and Practice of Tropical Medicine, Part I: By L. Everard Napier, C. I. E., F. R. C. P., Calcutta, Thacker, Spink & Co., 1943. Pp. 522. Price, \$8.00 (20 rupees).

Part I of Dr. Napier's work on tropical medicine deals, as the jacket indicates, with the more important tropical diseases. Part II is expected to be issued within a year. The author calls attention to the absence of an index, which, however, will come with Part II; but this is not a serious omission since each article has a very complete outline of contents. All of the fields are covered by Dr. Napier but the article on leprosy is written by Dr. John Lowe. The volume is well illustrated,

most of the illustrations being original. As might be expected, the book has a distinct flavor of British India. This is well illustrated, for example, in the article on the typhus fevers, where we find a separate discussion headed "Typhus Fever in India." In many of the subjects the preventive medicine aspects are very fully covered, for example, malaria, cholera, and yellow fever. In the latter, special emphasis is put on the problem as it confronts the Orient. The author has avoided mistakes commonly made. We find the clear statement that no mammal reservoir for Rocky Mountain spotted fever has been proved, and it is equally commendable that he does not see the

usually mentioned, but often imaginary, diagnostic difficulties as between tularemia and plague. When Dr. Napier's views vary from those usually held, the fact is made clear. Thus, he restricts the term "epidemic diseases" to examples of man to man transmission, in which man forms an essential link. This has excluded the bubonic type of plague. Under amebic dysentery the author, in a well reasoned argument, expresses the unwillingness to use the term "amebiasis" as covering all forms of infestation of *Endamoeba histolytica*, preferring the term "amebic dysentery" for the definite clinical manifestations; this, the reviewer considers a very sound position. One interested especially in biological therapy turns to the author's views on serums and vaccines. They are judged to be more discriminating than one finds in many texts.

Napier regards anti-plague serum as of no great value; anti-tularemia serum he rates even lower, but is rather favorably impressed by Shiga dysentery antitoxic serum. He favors the use of undulant fever vaccine in chronic cases and anti-serum in acute cases. He is mildly favorable toward cholera phage in therapy but is skeptical of cholera vaccine in prophylaxis. Contrary to the views held by some workers he regards anti-plague vaccine as of value in the prevention of pneumonic plague. The author was engaged for many years in laboratory studies, but properly warns against over-emphasis of their importance or of too much dependence on them. In the sections on laboratory work, one finds much detail in many places, though nothing superfluous; for example, in the discussion of kala-azar, detailed instructions are given as to sternal and splenic punctures; and under cholera in India, it is made clear that there may be great difficulty in determining the presence of, and even uncertainty as to just what constitutes a true cholera vibrio. The author may have thought it unnecessary, but from the reviewer's point of view, a brief outline of the postmortem appearance of naturally acquired rat plague might have been included to advantage. A few points might be mentioned on which the author's views are of special interest; he considers alcohol at the end of the day's work as a sometimes useful psychologic stimulant, and places climate very low among the etiologic factors of tropical neurasthenia. In the very excellent article on malaria, he would restrict parenteral therapy to one day except in very rare instances. To any one intelligently interested in leprosy, the view that usually only infectious cases should be isolated is sound, as well as the opinion that the mere making of a positive diagnosis is not very helpful; type and stage also are important. Among the few statements on which there might be difference of opinion, the following are noted: The reference to tick-borne relapsing fever in the southern and eastern United States is hardly in accordance with experience, though the author mentions the states in which it is more frequent in

the west and southwest. The statement that amebic liver abscesses do not occur in temperate climates is perhaps too strong, judged by experience in the United States. No attempt has been made to check editorial matters but it is noted that "Siskiyou" lacks the final "u". Most of the subjects are dealt with in a way that indicates the sure confidence of the competent, experienced observer. The work should be of great value to students, physicians, and to anyone else who wishes to be familiar with the conditions discussed. The book is a valuable addition to the literature on tropical medicine and those interested in this field will hope for the early appearance of Part II.

G. M. MCCOY, M. D.

The Permeability of Natural Membranes: By Hugh Davson, D. Sc. and James F. Danielli, D. Sc., A. I. C. with a foreword by E. Newton Harvey. New York, Macmillan Co., 1943. Pp. 362. Price, \$3.75.

This timely monograph, a general survey of the field of permeability, will be welcomed by students in medicine, physiology, and biochemistry, as a valuable supplement to the brief and often inaccurate treatment of the subject in the average textbook. The authors point out that permeability studies have passed beyond the preliminary exploratory stage. They have now reached the stage at which quantitative analysis is important and it becomes necessary to define what can, and what cannot, be done by the cell membrane, "by surface action" and by "changes of permeability."

There are 21 chapters dealing, among other matters, with the significance and interpretation of permeability studies, methods, equations, structure of the plasma membrane, permeability to gases, water, proteins, electrolytes and dyes. The chapters on the permeability of erythrocytes and the kidney and the effect on permeability of narcotics and temperature should be of particular interest to the student in medicine. There are frequent summaries and a good bibliography at the end of each chapter and the last chapter brings together the evidence for the modern theories of cell permeability.

H. S. MAYERSON, Ph. D.

Pain (Proceedings of the Association for research in Nervous and Mental Disease, 1942). Baltimore, Williams and Wilkins Co., 1943. Pp. 468. Illus. tables. Price, \$7.50.

There is no clinician to whom the symptom pain is not of utmost importance. It is probably the most prevalent presenting symptom in a case history. Call for relief must be met. It seems, therefore, an extremely excellent selection on the part of the Association for Research in Nervous and Mental Disease to give us this contribution entitled "Pain."

The choice of contributors brings together authorities in many fields. Unfortunately all fields could not be embraced. Unhappily it is apparent

that a limitation on space was demanded for some presentations reveal the condensation of thought and indicate the wealth of information withheld.

Pain threshold and factors contributing to perception and reaction are covered with a thoroughness calling for physiologists, anatomists, neurologists and psychiatrists, neurosurgeons, internists and dermatologists.

An otolaryngologist, an orthopedist, a urologist, a gastroenterologist, and a cardiologist presented their aspects joining the neurologist and psychiatrist in an evaluation of the type pain.

The analgesics are given pharmacologic and clinical evaluation. Surgical orthopedic and neurologic aspects, were considered in therapeutics and finally the virtues of psychiatry were expounded.

It would be impossible properly to praise each contributor in relation to his achievement without becoming voluminous. The reviewer found each section well prepared, pleasantly readable and understandable for one departing from familiar fields. The clinical application in each instance was appreciable. Illustrations are ample and well chosen.

On the whole this is a noteworthy accomplishment and the editorial board, Drs. Wolff, Gasser and Hinsey, are to be complimented with the contributors in adding this twenty-third addition to an already illustrious series. It will maintain the standard so well established.

GORDON MCHARDY, M. D.

Medical Care of the Discharged Hospital Patient:

By Frode Jensen, M. D., H. G. Weiskotten, M. D., and Margaret A. Thomas, M. A.. New York, 1944. Pp. 94. Price, \$1.00.

The purpose of this little book is to report an experiment conducted by the Syracuse University Hospital, from July 1, 1940 to February 1, 1942, with regard to follow-up care of patients discharged from the medical wards of the hospital. The hospital staff has made the observation that almost 90 per cent of the patients admitted to the medical wards were suffering from chronic diseases and that about one-third of these had chronic degenerative cardiovascular diseases. In order to reduce the number of admissions and the days of hospital care for this large group of clinic patients the University Hospital arranged for an extra-mural resident to make regular calls upon these patients at home and to prescribe for them at home as much as possible. It was found that the number of admissions for these patients to hospital wards was reduced considerably. In fact, the hospital estimated that three times the cost of the entire experiment was saved in terms of hospital cost, not to mention the benefits derived in making beds available for more acute illnesses. The program was discontinued because the resident entered the Armed Service.

The little book is very challenging. The problem of chronically ill patients in any general hospital is particularly acute at the present day because of

the shortage of beds. On a representative day (February 28, 1944) a survey of the patients in Charity Hospital revealed one-third of the hospital beds occupied by chronically ill patients, exclusive of tuberculosis and venereal diseases. Upon discharge from the hospital most of these patients are referred to the clinic for periodic observation. A substantial percentage, however, failed to report or were unable to purchase medication or arrange transportation. The result is that many of these experience progression of their disease until they must return to the hospital for readmission.

One wonders if home visits of clinic patients, such as this experiment reported by the Syracuse University Hospital, may not be the ultimate answer provided professional care could be secured during this emergency.

ROSCOE L. PULLEN, M. D.

Medical Parasitology and Zoology: By Ralph Welty Nauss, B. Sc., M. D., Dr. P. H. New York, Paul B. Hoeber, 1944. Pp. 534. Price, \$6.00.

This war has created conditions throughout the world that will encourage the international exchange of human parasites, and temperate countries that have hitherto been somewhat poorly supplied with parasitic fauna will, during and after the war, undoubtedly enrich themselves in this direction, even if they impoverish themselves in others. It is therefore natural that there should be a boom in the study of these parasites and the diseases that they cause, and medical schools are considering the advisability of including much more parasitology in their curricula. This book has obviously been written to meet this new tendency.

It is a short book that skims over the subject lightly, but usually accurately and efficiently, and it will certainly meet the needs of the student in most medical schools in this country; one must exclude Tulane, as this school has for many years made a specialty of tropical medicine and parasitology and expects more from its students than this book will give them.

It would be easy to criticize the book on account of the many omissions, and to question the emphasis given to certain aspects of the subjects included, but this would scarcely be fair in view of the obvious desire of the writer to make the whole subject short, simple and concise. The advanced student will however find the book disappointing, and one does question whether it is advisable (in 1944) to let any student believe that in malaria the sporozoites enter directly into the red cells and start the schizogony cycle, that sodium antimony tartrate is the drug now generally used in the treatment of kala-azar, or that the aldehyde test will give an immediate indication as to whether the patient is cured or not.

There are a few indications of careless proof reading.

On the whole this book should prove a very use-

ful addition to the library of the medical student who will find it pleasanter to read and much less alarming than many of the larger books on which he has had to rely hitherto. He will find the glossary at the end particularly useful.

L. E. NAPIER, M. D.

Pathology and Therapy of Rheumatic Fever: By Leopold Lichtwitz, M. D. New York, Grune and Stratton, Inc., 1944. Pp. 211. Price, \$4.75.

The opening sentence to this book states that rheumatic fever is a non-infectious disease. This point of view is not in accord with the prevalent theory that rheumatic fever is related in some way to infections of hemolytic streptococcus. Throughout this little book the author develops his theory of the allergic origin of rheumatic fever due to sensitization to antigens, protein in nature, which in most cases are believed to be products of micro-organisms. A similar relationship to nephritis and rheumatoid arthritis is likewise considered.

The book is well written and well illustrated, and should provide much usefulness to the thoughtful student of infectious diseases.

ROSCOE L. PULLEN, M. D.

Elimination Diets and the Patient's Allergies: By Albert H. Rower. Philadelphia, Lea and Febiger, 1944. Pp. 256. Price, \$3.50.

This is the second division of a well known and useful book. The basic thesis of the author is that skin testing as a means of determining food sensitizations is fallacious. Certainly this is the general experience. It follows then that other approaches are required to uncover the responsible foodstuffs. The Rowe elimination diets have long been helpful in this regard. Making allowance for a certain enthusiasm about the importance of foods in the production of symptoms the book, nevertheless, is of value to all physicians and to allergists especially.

VINCENT J. DERBES, M. D.

The Biochemistry of Malignant Tumors: By Kurt Stern, M. D. University of Vienna, and Robert Willheim, M. D., University of Philippines. Brooklyn, N. Y., Reference Press. 950 pp. Price, \$12.00.

In this treatise the attempt has been made to cover the relationship of cancer to chemistry in the broadcast meaning of both words, based on a well-documented collection of the literature through 1941. It is neither a textbook nor an attempt to propound a "cancer theory". A previous monograph by these authors "Die Wege und Ergebnisse chemische Krebsforschung" (1936) has been extended in scope and brought to date. In the present volume emphasis has been placed upon the work of the past twenty-five years with the idea of summarizing what is known today, and to point out what is not known in the field.

In view of the enormous scope of the topics to be

dealt with, the authors thought it preferable to employ a somewhat arbitrary grouping of the material in accordance with the principles of biochemistry. At the same time they felt it necessary to include some data which at present do not appear to be directly related to chemistry—an overstepping of boundaries which seems justified in the interest of a coherent presentation. Chapter headings include Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Enzymes, Nutrition and Vitamins, Metabolism, Endocrine Glands and Their Hormones, Immunology, Biochemical Aspects of Tumor Origin and Tumor Growth and Chemical and Biological Tumor Diagnostics. Details of methodological nature, chemical formulae and mathematical equations have not been presented but reference has been made to the original articles.

A. O. KASTLER, Ph.D.

Erratum: The price of the volume, *Biomicroscopy of the Eye* by Berliner, was incorrectly noted in the April issue. The correct price is \$17.50.

PUBLICATIONS RECEIVED

Grune & Stratton, New York: *The Psychology of Women*, A Psychoanalytic Interpretation, by Helene Deutsch, M. D. *Forsdike's Textbook of Gynecology*, by J. H. Peel, M. A., B. M., B. Ch. (Oxon.), F. R. C. S., M. R. C. O. G. *The Management of Neuro-syphilis*, by Bernard Dattner, M. D., Jur. D.

W. B. Saunders Company, Philadelphia and London: *Medical Diagnosis, Applied Physical Diagnosis*, edited by Roscoe L. Pullen, A. B., M. D. *Aesculapius in Latin America*, by Aristides A. Moll, Ph. D. *The American Illustrated Medical Dictionary*, by W. A. Newman Dorland, A. M., M. D., F. A. C. S., 20th edition.

Philosophical Library, New York: *Virus Diseases in Man, Animal and Plant*, by Gustav Seifert. *Practical Malaria Control, a Handbook for Field Workers*, by Carl E. M. Gunther, M. D., B. S., D. T. M. (Sydney). *Minor Surgery*, edited by Humphry Rolleston and Alan Moncrieff.

Charles C. Thomas, Publisher, Springfield, Illinois: *Tuberculosis of the Ear, Nose, and Throat, including the Larynx, the Trachea, and the Bronchi*, by Mervin C. Myerson, M. D. *Manual of Human Protozoa*, by Richard R. Kudo, D. Sc.

Cornell University Press, Ithaca, New York: *Civilization and Disease*, by Henry E. Sigerist, M. D., D. Litt., LL.D.

Lea & Febiger, Philadelphia: *A Manual of Physical Therapy*, by Richard Kovacs, M. D.

J. B. Lippincott Company, Philadelphia, Montreal, and London: *Functional Disorders of the Foot, Their Diagnosis and Treatment*, by Frank D. Dickson, M. D., F. A. C. S. and Rex L. Diveley, A. B., M. D., F. A. C. S.

Paul B. Hoeber, Inc., New York and London: *Intravenous Anesthesia*, by R. Charles Adams, M. D., C. M., M. S. (Anes.).

UNIVERSITY OF CALIFORNIA
MEDICAL CENTER LIBRARY

THIS BOOK IS DUE ON THE LAST DATE
STAMPED BELOW

Books not returned on time are subject to a fine of 50c per volume after the third day overdue, increasing to \$1.00 per volume after the sixth day. Books not in demand may be renewed if application is made before expiration of loan period.

RETURNED

DEC 18 1980

Apr 12 '45

Apr 24 '45
May 25 '45

Dec 20 '45
Apr 27 '40

Apr 13 '47

1 - 27 - 21 day

Apr 29 49

MAY 3 1956

7 DAY

RETURNED

JAN 23 1966

JAN 19 1966

7 DAY

DEC 10 1980

v.96
1943-
1944

New Orleans medical and sur-
gical journal.

62929

Roca, L.O.

Apr 12 '45

APR 13 1945

J.H. Kay

APR 24 1945

J.H. Kay

May 25 '45

MAY 26 1945

Dr. Burroughs

Dec 20 '45

Apr 27 '46

APR 27 1946

MORRIS

Mar 13 '47

MAR 13 1947

P. Soroker

Mar 29 '47

MAR 29 1947

Robinson (Bs.)

Apr 12 '47

APR 22 1947

Hayzinger

Apr 29 '49

APR 29 1949

University

